Amateur Radio

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100 YEARS 1910 ~ 2010 WIRELESS INSTITUTE OF AUSTRALIA

Celebrating the centenary of organised amateur radio in Australia

Super Springtime

See story page 48

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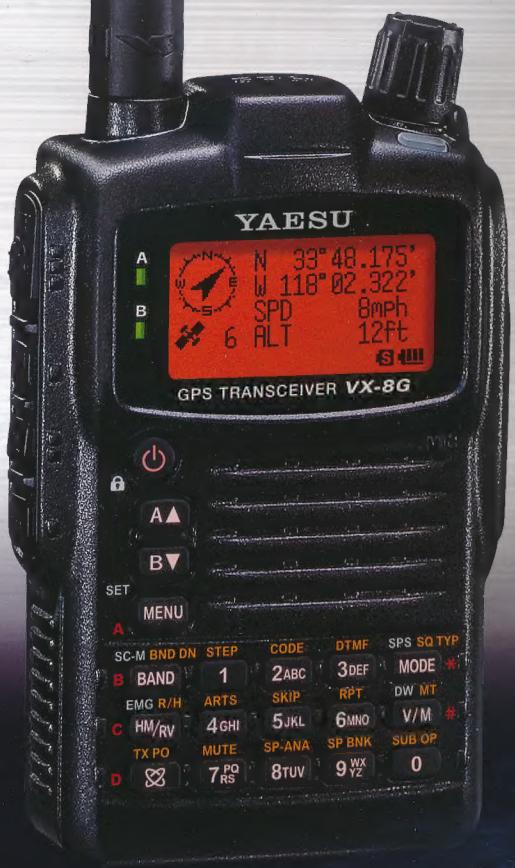
Inside:

Build a Sun and Moon Noise Meter
Balanced line feeders
Build a RF voltmeter for transceiver servicing
Winter field day

YAESU

A TECHNOLOGY BREAKTHROUGH

THE NEW PRESTIGIOUS COMPACT RADIO WITH APRS



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Editorial

Editor:

Peter Freeman VK3PF
editor-armag@wia.org.au

Technical Editor

Peter Gibson VK3AZL

Publications committee

Don Jackson VK3DBB
Evan Jarman VK3ANI
Bill Roper VK3BR
Ewen Templeton VK3OW
Ernie Walls VK3FM
Greg Williams VK3VT

All circulation matters

nationaloffice@wia.org.au

How to submit material

Secretary
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or armag@wia.org.au

Columns and letters to Editor

Editor AR Magazine
PO Box 273
Churchill Vic 3842
or
editor-armag@wia.org.au

Hamads

'Hamads'
PO Box 2042
BAYSWATER VIC 3153
hamads@wia.org.au

Advertising

All enquiries to
Advertising Manager
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or
admanager@wia.org.au

Registered Office

Unit 20 11-13 Havelock Road
BAYSWATER VIC 3153
Australia
Phone: 03 9729 0400
Fax: 03 9729 7325

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Our Cover:

Heath VK3TWO/VK6TWO operating the VK100WIA Super Springtime Public display within the Scout area at Perth Royal Show.

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Contributions to Amateur Radio
Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

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A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's oldest National Radio Society, founded 1910.

Representing

The Australian Amateur Radio Service

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Registered Office of the WIA

Unit 20, 11-13 Havelock Road
Bayswater, Victoria, 3153
Tel: (03) 9729 0400 Fax (03) 9729 7325
email: nationaloffice@wia.org.au
http://www.wia.org.au

All mail to

PO Box 2042 BAYSWATER VIC 3153

Business hours: 10am – 4pm weekdays

National Office staff

Manager	Mal Brooks VK3FDSL
Administration Officer	Margaret Williams
Examination Officer	Dianne Ashton VK3FDIZ

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Editorial

Peter Freeman VK3PF

End of VK100WIA operations

By the time this issue reaches you, the six-month tenure of VK100WIA will have ended.

I am preparing these notes whilst the local club is operating with the callsign, with the cold, wet and windy weather slowly moderating. Station set up was done between rain squalls, with wind gusts above 70 km/hour which produced some challenges.

Sunday saw us ready for the local Guides to arrive for some JOTA operation from 10:00 am local time. But no Guides arrived, only the group leader. Unperturbed, the team was ready to go with general operations from 0000Z. After an initial busy period, the pace slowed early in the afternoon. Hopefully things will pick up later in the afternoon.

We will have a report on the overall statistics for the VK100WIA operations in a future issue. I hope that all who attempted to qualify for the Centenary Award were able to make the required contacts. From what I could see, some clubs were unable to maintain on-line logging for the full period of operations, so some may need await the processing of paper logs to confirm all contacts with the special callsign were logged.

Everyone could also work WIA members to gain points to qualify, after having worked two club operations with the special callsign. All contacts needed to be made by the end of October, but you have until the end of January to submit your claim for the award – good luck.

Publications Committee vacancies

The prime responsibility of the Publications Committee is the production of regular monthly issues of *Amateur Radio*; it also oversees the production of the annual *Callbook*. In the New Year, we may consider some additional projects. The committee has several amateurs undertaking a variety of task, from Technical Editors and proof readers, through to a Secretary and your Editor. Everyone is a volunteer, the reward is seeing the fruits of your work in print.

We have space for a small number of additional members to spread the workload. We can determine the task that is the best fit for your skills. Ideally, you will be located close to or in greater Melbourne, so that you can attend the regular monthly meetings.

I invite your expression of interest, in which you indicate how you may assist with our operations. Email your submission to me, via the address on page one of this issue.

Contributions to *AR*

We have received over 100 articles this year, not including some of the Centenary historical articles, club news and column contributions. Very few articles have been rejected, but space limitations mean that some authors may wait more than six months before seeing their contribution in print. Do not be disheartened – we will eventually publish everything.

How can you see your words in print sooner? One way is to send in your report of an activity shortly after an event. The October issue reflected such prompt submission – we had articles quickly reporting on the ILLW weekend, so we made those prompt reports into a feature in that issue. Further ILLW 2010 reports will be saved to promote next year's event.

Another method to speed publication is to include high quality, well composed images with your article. I am always looking for good high resolution images for the cover, but an image must relate to a topical event or an accompanying story, either general or technical.

The details of how you can contribute to this magazine are published on the WIA website. Look under Members Area, AR Magazine. Once on the *AR* page, look for the link "Contributing material". There is probably some scope for us to update some details, but the basic facts are still the same: text should be submitted as a Word document or rtf file, and images in an appropriate electronic format, with photographs in as high a resolution as possible.

Do not forget the **Spring VHF/UHF Field Day** coming up in late November. Of course, there is also a contest somewhere in the world almost every weekend. If you are chasing DX, get on air and keep a watch on the propagation indicators – good hunting.

Cheers,

Peter VK3PF. **ar**

Permitted Power Levels

WIA comment

The WIA Board has considered the many representations that have been made about the permitted power levels for amateur transmitters, and has decided to again raise the issue, in the context of applications to vary the conditions of a licence.

I set out, slightly edited, the substance of my letter to the Australian Communications and Media Authority on the issue:

"The issue of the permitted power levels for amateur transmitters has been raised many times with the WIA by many members, and has been the subject of previous correspondence.

This letter again addresses this issue.

The (then) ACA's Outcomes of the Review of Amateur Service Regulation, May 2004, (the Outcomes), Appendix A, specified Permitted Power as 10 W PEP all permitted modes for Foundation licensees, 100 W PEP for all permitted modes for Standard licensees and 400 W PEP all modes for Advanced licensees.

By a letter of May 2005 advising that the introduction of the Outcomes would be delayed, Mr. Alan Jordan also advised:

"I also advise that the proposal to specify transmitter output power only in terms of Peak Envelope Power (pX) will now not go ahead. This change is due to concerns about the potential for increased human exposure to electromagnetic radiation and increased interference resulting from what would be an effective increase in transmitter power output for some emission modes".

The WIA responded to that letter by a letter dated 12 January 2006, seeking a reconsideration of the ACMA position.

The position of the Authority in refusing the WIA's request was set out in a letter from Mr. Jordan to the WIA dated 2 May 2006.

The Authority has adopted a policy to allow higher power for earth-moon-earth experiments above 50 MHz for Advanced licensees. That policy is set out on the ACMA website.

The WIA does not suggest any change to that policy in respect of earth-moon-earth experiments.

However, many amateurs have continued to express concern in respect of the ACMA policy in relation to amateur power limits outside that policy.

The WIA believes that these concerns are justified, and now proposes a solution that meets the concerns of the ACMA.

We believe that the reasons for change are valid.

One matter that is raised by many is the power limits permitted by other administrations, particularly the United Kingdom and New Zealand.

The Table below gives a summary of power limits permitted in a number of countries.

While the Table covers only 13 countries, it does provide a broad indication of the positions taken by countries with significant amateur radio activity.

The Table covers the general position at HF and 2 metres with a number of countries having special conditions, such as for VLF and 6 metres.

Country	Power limit for highest level licence
Belgium	1000 watts
Canada	2250 watts PEP or 750 watts carrier
France	750 watts PEP all modes on HF 120 watts PEP all modes on 2 metres
Germany	750 watts PEP all modes
Holland	400 watts PEP all modes
Japan	1000 watts HF, 50 watts 2 metres
Oman	150 watts
New Zealand	500 watts PEP all modes
South Africa	400 watts PEP all modes
Spain	HF 800 watts PEP, 200 watts carrier 2 metres, 200 watts PEP, 50 watts carrier
UK	400 watts PEP all modes
USA	1500 watts PEP all modes
Former Yugoslavian countries	2000 watts

There are variations as to whether the power is measured "at the transmitter" or "at the antenna".

Michael Owen VK3KI

The UK has adopted the "at the antenna" measurement and NZ "at the transmitter".

Higher power limits are sought for a number of reasons.

One is to overcome the increasing global electro-magnetic noise pollution on all HF bands from consumer and commercial devices.

A factor influencing many is that the lower power limits imposed by Australia detrimentally affect their ability to provide emergency HF communications with countries in the region suffering natural disasters and to participate in radio sports. There are an increasing number of contests throughout the year, and Australian amateurs wishing to participate must do so at a disadvantage to those competing from other countries.

Recognising the previously expressed concerns of the ACMA, the WIA proposes that the ACMA adopt a policy that allows Advanced licensees to apply for a variation of their licence to permit higher power from a fixed location. This would enable assessment on a case by case basis, and allow better management of interference issues.

The WIA suggests that the following should form the basis of such a policy:

As in the case of applications for higher power for EME experiments, the applicant must satisfy the ACMA that the proposed signal levels from the station comply with the radiofrequency emission limits stipulated in the ARPANSA standard *Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency Fields - 3 kHz to 300 GHz.*

Higher power should be available on all HF bands where the amateur service is primary (and the band 7100 to 7200 kHz).

Continued next page

WIAnews

IARU Region 2 General Assembly Ends

The XVII IARU Region 2 General Assembly held at Salinitas, Sonsonate, El Salvador came to an end on 8 October 2010. 58 delegates attended the conference, representing 19 Region 2 Member Societies, 12 in person and 7 by proxy.

IARU Region 2 is the IARU regional organisation covering the countries of North, Central and South America.

The host society was the Club de Radio Aficionados de El Salvador, CRAS, and was warmly congratulated by all for the success of the Assembly.

During the Conference many issues affecting amateur radio were discussed, ranging from the forthcoming WRC in 2012 to the question of attracting new amateurs.

The General Assembly accepted the invitation of the Federación Mexicana de Radio Experimentadores to host the XVIII General Assembly in 2013 in the city of Monterrey, Mexico.

The General Assembly re-elected Reinaldo Leandro YV5AMH as President and José Arturo Molina YS1MS as Vice President, with Secretary Ramón Santoyo XE1KK to serve another term.

Amateur radio backs up Chile mine rescue

The world watched via television the rescue of 33 trapped miners at San Jose in Chile. Giving its support was the Radio Club de Chile (RCCH) using its resources to boost the availability of communications in the area. President of the Radio Amateurs of the Region of Atacama (Radio Club Copiapo), Jose Maldonado CE1RXY has reported that support was offered to overcome the lack of communications facilities in this desert region of Chile.

It provided communication support between the authorities and emergency equipment operators inside the San Jose mine complex. The mine complex in a desert region did not have telephone contact. Radio Club Copiapo spokesman Erico Jos Andrade CE2EPB said some 80 members of the club were involved from day one of the mine accident.

They installed amateur equipment in the mine complex, and club volunteers took shifts to provide communication support. "This, together with additional mobile police stations, hospitals and fire battalions, kept everyone abreast of all the needs and urgent requirements," said Erico CE2EPB. The support enabled links for various authorities with emergency equipment inside the San Jose site and also with family and authorities in the city of Copiapo.

As this collaboration continued all shared the common hope for the safe rescue of the miners, trapped 700 metres (2,300 ft) below the ground in the copper mine since 5 August. All the miners were rescued.

2010 JOTA/JOTI Address to Scouts and Guides

Her Excellency Ms Quentin Bryce AC, Governor-General of Australia, Chief Scout and Patron of Girl Guides Australia addressed Scouts and Guides in a message broadcast at 1300 hours local time during the annual Jamboree On The Air and Jamboree On The Internet (JOTA-JOTI).

JOTA-JOTI was on the weekend of 15-17 October 2010, and involved some 10,000 Scouts and Guides in Australia, and about 500,000 worldwide. JOTA-JOTI gives young people an opportunity to meet and learn about Scouts and Guides in other parts of the world.

JOTA-JOTI has a long tradition in Scouting and Guiding. This year is the 53nd JOTA and 14th JOTI.

Amateur Radio in the press

The Fraser Coast Chronicle published this story dated 12 October 2010 under the heading "Radio buffs share skills".

"Amateur radio buffs got to show off the technicalities of their hobby last weekend and even got some new toys to play with.

A public display of the Maryborough Electronics and Radio Group attracted visitors from the Fraser Coast and further afield who were interested in radio communications.

Club president Geoff Emery said the weekend display at the Maryborough West Scout Hall was a great opportunity to share the hobby with the general public.

"It has been rather successful," he said.

"We even had one man come in, who didn't even leave us his name, who had some radio equipment that he wanted to go to a good home."

"He donated it to the club, which was rather tremendous. It's ideal for the hobbyist so we will definitely be able to use it."

The club is preparing for a big couple of weeks, with members' expertise needed at the Scout Jamboree of the Air next weekend, followed by another public display at Maryborough City Hall."

ar

WIAcomment continued

Power limits up to 1,000 watts PEP or 500 watts mean should be allowed.

This policy should be applicable only to Advanced licensees.

May we ask that the ACMA clarify one matter?

It is noted that within the "Key Documents" for the Amateur Service, there is a lack of clarity in respect to how transmitter power should be measured and what the test parameters should be? As a starting point the WIA suggests that the methods contained in Sections 5.43, 5.44, 5.45, and 5.46 of the former Amateur Operator's Handbook (Revised December 1978) may be a starting point.

We ask that the ACMA specify the preferred methodology for measuring transmitter RF power for the following emissions, namely SSB, AM, pulse and digital emission modes (FSK, PSK, MFSK and MPSK) which could be classified under either peak power or mean power methods.

With those changes the WIA submits that the ACMA would be adopting a policy that provides a realistic response to the many requests for a review of the earlier decision, but addresses the concerns of interference and electromagnetic radiation exposure."

I hope you agree with what is expressed in the letter. **ar**

Variations to some WIA examination and callsign fees

In December 2008 the WIA announced that the cost of a WIA examination would be $67.00 including GST from 2 February 2009, except for candidates aged under 18 on the day of assessment, which remained at $35.00.

2 February 2009 was the date that the new contractual arrangements with ACMA relating to examinations came into effect. Under these contractual arrangements the WIA is obliged to comply with the Commonwealth Cost Recovery Guidelines with charges requiring Commonwealth approval.

In February 2009 the WIA announced the charges for a callsign recommendation from 2 March 2009, necessary to obtain a licence. This was also in accordance with those new contractual arrangements.

The WIA is obliged to charge fees on a cost recovery basis. That charge must be approved by ACMA as being reasonably related to the costs incurred or to be incurred by the WIA in relation to the matters to which the charge relates.

The contract between the WIA and ACMA required a complete review of the costs after the first year, and thereafter the provision of annual audited financial information to ACMA. This complete review has taken place, in considerable detail, and with the provision of significant additional information to answer the ACMA's questions.

The result has been some small increases, some small reductions and a new charge.

Summary

- **Under 18 examinations unchanged:** The charge for all examinations (Foundation, Practical Assessment taken alone, Standard and Advanced Regulations and Standard Theory and Advanced Theory) for a candidate aged under 18 on the day of assessment remains at $35.00.
- **Level 1 callsign recommendation unchanged:** a three or four letter call sign in any state or territory where the WIA will select the next available call sign remains at $5.00.

Changes on and after 1 December 2010

- **All other examinations, except the Practical Assessment taken alone**, increases from $67.00 to $70.00.
- **A Practical Assessment taken alone:** drops from $67.00 to $65.00.
- **A replacement certificate of proficiency:** drops from $14.00 to $10.00.
- **Recognition of Prior Learning:** attracts a new application fee of $100.00.
- **Callsign Recommendation Level 2:** a three, four and two letter call sign in any state or territory except New South Wales, Queensland and Victoria, where the individual can select two preferences for a particular call sign shown as an available call sign from the website daily list drops from $20.60 to $20.00.
- **Callsign Recommendation Level 3:** a two letter call sign in the states of New South Wales, Queensland and Victoria drops from $48.85 to $48.00.
- **Callsign Recommendation Level 4:** a special event callsign drops from an hourly rate of $67.80 to a flat fee of $25.00.

WIA President Michael Owen VK3KI said that the WIA was pleased it was able to continue to subsidise, with the approval of the Commonwealth, the cost of examinations for candidates under 18, and applications for the next available callsign, also of importance to young people.

He also said that while the changes were very small, it was pleasing that there could be some reductions.

It was also pleasing that the ACMA recognised the fact that the fees for examinations were low because of the work of volunteers. No part of the charges is attributable to the time of WIA Assessors, Learning Facilitators, the WIA Directors, the Secretary or the Treasurer.

The President also announced that on and after 1 December 2010 the existing arrangements will continue for Level 3 callsign recommendations, a two letter callsign in Queensland, NSW or Victoria, with applications only being accepted by mail, but instead of providing a recommendation to the first application received and opened, the recommendation will be given to an application chosen at random after seven working days from the day the callsign was first placed on the Public List. This will overcome the disadvantage suffered by those not living in a capital city and not able to use Express Post.

Michael Owen also announced that on and after 1 December 2010 WIA Assessors will be able to claim reimbursement of motor vehicle expenses at a defined rate if travelling a distance greater than 100 km from their ordinary place of residence to conduct assessments.

All money amounts shown on this page include GST. **ar**

WIA Examination related charges:

Examination	Current Charge		Charge on/after 1/12/2010	
		U/18		U/18
Foundation	$67.00	$35.00	$70.00	$35.00
Practical Assessment taken alone	$67.00	$35.00	$65.00	$35.00
Standard/Advanced Regulations	$67.00	$35.00	$70.00	$35.00
Standard Theory	$67.00	$35.00	$70.00	$35.00
Advanced Theory	$67.00	$35.00	$70.00	$35.00
Application for RPL	n/a	n/a	$100.00	$100.00
Replacement certificate of proficiency	$14.00	$14.00	$10.00	$10.00

WIA callsign related charges:

Service	Description	Current Charge	Charge after 1/12/10
Level 1 Callsign Recommendation	The next available three or four letter call sign in any state or territory selected by the WIA.	$5.00	$5.00
Level 2 Callsign Recommendation	A three or four letter callsign (all states and territories) and two letter call signs except NSW, Vic. and Qld., where the individual can select two preferences for a particular call sign shown as an available call sign on the WIA website	$20.60	$20.00.
Level 3 Callsign Recommendation	A two letter call sign in the states of NSW, Qld and Vic.	$48.85	$48.00
Level 4 Callsign Recommendation	Special event callsign.	$67.80 per hour	$25.00 Flat Fee

A noise meter suitable for Sun and Moon noise type measurements

Charlie Kahwagi VK3NX

Preface:

In trying to track the moon on the higher microwave bands for EME operation, it became very obvious to me early on that, with the beamwidths normally encountered, it was not enough to rely on the dish calibration to be sure one was pointing directly at the moon. With only a slight misalignment, I found that signals would be lost. So how to overcome this? One of the easiest ways is to track via moon noise and not solely rely on the dish mechanics and indicator system. While this is not an article on automatic tracking of the moon, it describes a device that gives a visual aid to helping one keep the moon in the 'bore-sight'. As a by-product it allows for very accurate measurements on sun, moon and 'cold sky'/ground measurements. Its usefulness is also to help evaluate receive system changes and modifications with real world analysis for any receiver system.

Initial thoughts and conception

The noise meter described below will find many uses in an experimenter's shack: LNA comparisons, antenna array performance and analysis of microwave feeds ..... The list is only limited by the imagination!

There are many things to consider when trying to measure noise. There are many ways to accomplish this. We can use the audio output of a receiver with a linear gain and no AGC applied to do measurements or A/B comparisons. This works reasonably well for Sun noise measurements and to a lesser extent for ground to cold sky measurements. But for evaluating moon noise this method failed miserably for me. After discussing this with Luis Cupido CT1DMK, he showed me how integration mathematics is required to see that it will be almost impossible to see or measure accurately moon noise with a typical microwave EME system, such as mine, unless the moon noise is several dB above the background noise. What is required is a 'wideband' signal compared with the 'narrow bandwidth' of the audio spectrum. A wide bandwidth is required for the resolution required to see a fraction of a dB change. Most of my EME transverters use an IF of 144 MHz and as such it was an easy choice to utilize this part of the spectrum to examine a wide bandwidth portion when looking at moon noise and other noise such as Sun or Ground.

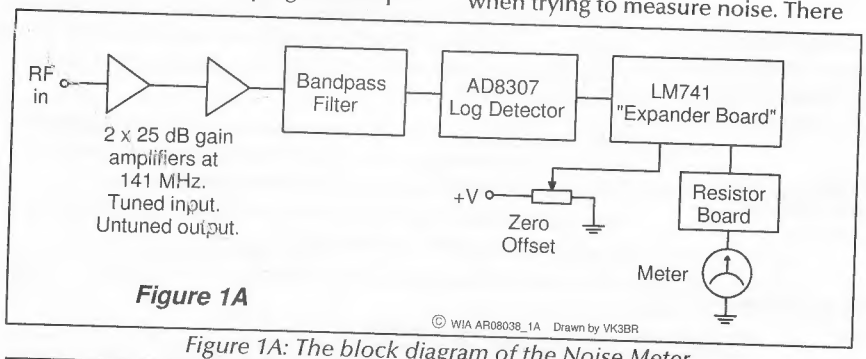

Figure 1A: The block diagram of the Noise Meter

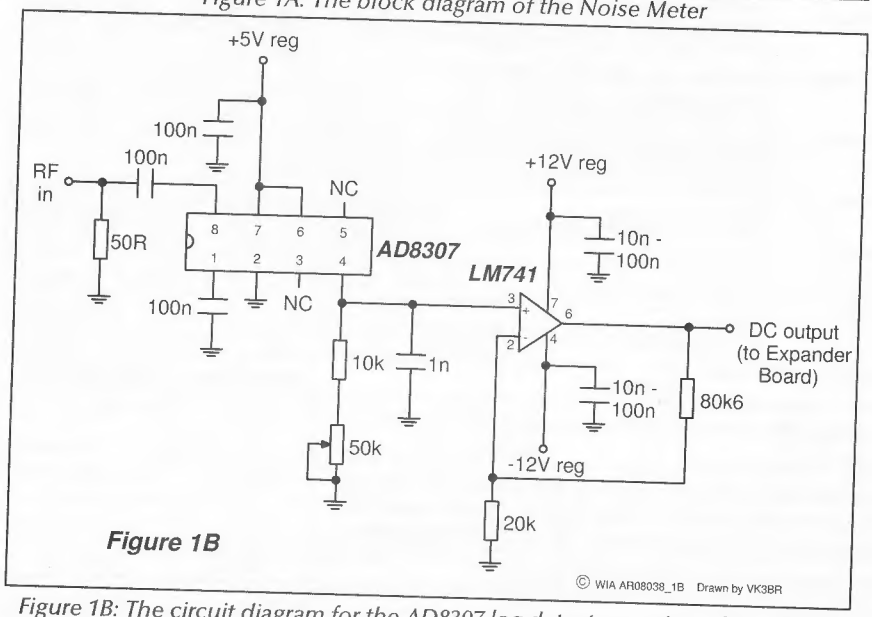

Figure 1B: The circuit diagram for the AD8307 log detector section of the meter.

In issue 2 in 2000 of the VHF Communications publication, Wolfgang Schneider DJ8ES described a 'Logarithmic detector amplifier up to 500 MHz' utilizing an 'AD8307' device (1). This device is from Analog Devices and is readily available as a traditional in-line package or SMD device. It is an RF detector that will provide a dB linear output. Close examination of the DJ8ES circuit led me to feel that this device would be ideal to form the basic building block of my 'noise meter'.

If I tapped off some wideband signal at the 144 MHz output from my transverters then I could use this to drive the AD8307 to give me a useable and calibrated detector voltage to drive a meter. Close inspection of the specifications of the AD8307 shows that its claimed dynamic range of 90

dB is useable between -75 dBm and +17 dBm (2). As such the RF levels required far exceeded that which one would normally be expecting to encounter in a typical receiver system.

Going through the design process

If the received RF signal in the microwave region is around -150 dBm as an example, one might expect about 20 dB gain in the LNA and another 20 dB conversion gain from the transverter. Our signal at the IF frequency is likely to be around -110 dBm. This is still well short of the minimum -75 dBm required by the AD8307. As such some further amplification is required.

I decided to use approximately 50 dB of gain ahead of the AD8307. (In my EME setup at home I use another amplifier ahead of this to put the signal levels around the middle of the range for the AD8307). By putting some amplification ahead of the AD8307, it also provides the opportunity to place a wideband filter at around 141 MHz. So having decided on this approach, the 'Noise Meter' circuit was developed. Please note that whilst the RF part of the system was designed around 144 MHz any frequency up to 500 MHz could be used.

Block diagram and AD8307 log detector

See Figure 1A and 1B

The block diagram described above shows the two stages of amplification and a band pass filter ahead of the detector. These were centered on 141 MHz and the band pass filter exhibits a 4 MHz -3 dB BW. All the important electronics comes after the detector. For an input of +10 dBm into the detector board a DC voltage of +10 V is available after the LM741. An input of -60 dBm produces +3 V. There is a little variation from true linearity and the 50 k pot helps to balance this out.

The LM741 in my detector circuit replaces the original LM358 chip in the DJ8ES circuit but it is still configured as a X5 amplifier. The output is 100 mV/dB. Please refer to the original article by DJ8ES for a thorough description on this board and for ideas on the practical construction and setup.

The RF 'preamplifiers' can be of any useful or handy design. A simple amplifier built 'ugly' style would be fine using modern MMICS. I built some very simple amplifiers using 'tuned input, unturned output' designs around some NE42484A GaAs FETs. Any suitable rated amplifier for the chosen frequency can be utilized.

Bandpass filter

See Figure 2

Once again, if a different IF is used, a suitable filter will be required. One could leave the filter out altogether and rely on the output filtering of the transverter but it was reasoned that some additional filtering would be a good idea because of the high level of amplification in the overall system. The filtering would help keep out any spurii, and the whole system is designed in 50 ohms.

Expander board

See Figure 3

A DC voltage of ~0 V - +10 V is available from the output of the log detector board and applied to the input of the expander board in all ranges but the 'FULL' range as selected via the front panel switch. In the full range the output of the detector board is fed directly to the 'meter resistance board'.

In the expander board, the first LM741 is configured as a X1 inverting DC amplifier and the second LM741 is configured as a X10 inverting 'difference' amplifier. The reference DC offset voltage is supplied via a front panel pot. It would be best to use a multi-turn pot for this application as it makes 'zero adjustment' easier.

Examining the function of the Expander Board

Example 1: Let us assume a signal of -20 dBm produced +7 V out of the detector board. When this is applied to the first LM741 a DC voltage of -7 V is produced at pin 6. This is then

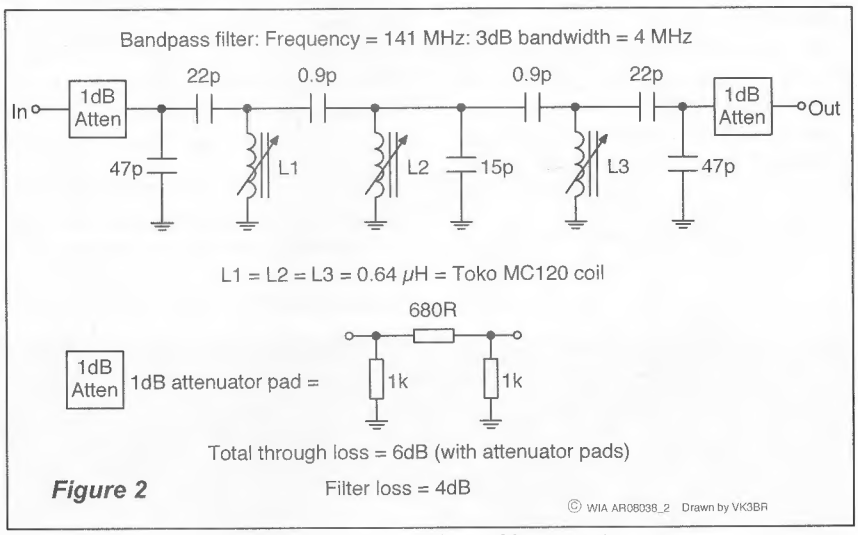

Figure 2: The bandpass filter circuit.

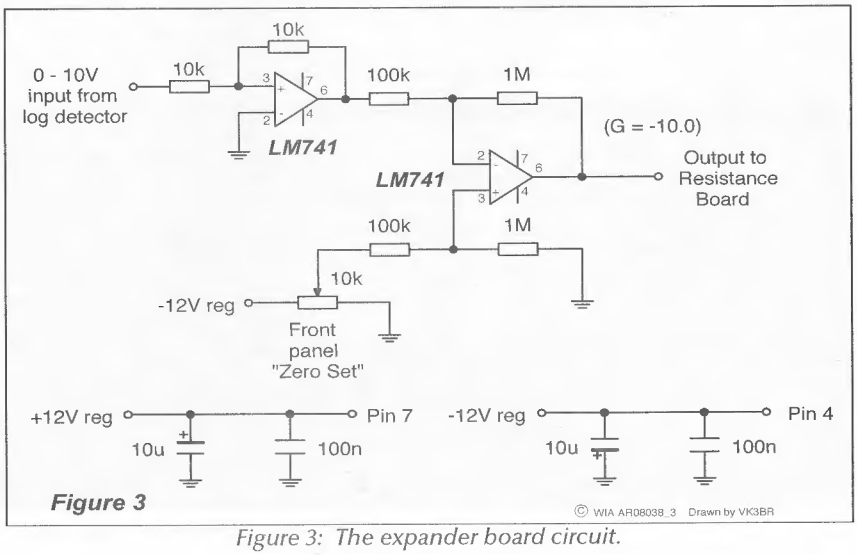

Figure 3: The expander board circuit.

applied to the second LM741 via the 100 k resistor to pin 2. At the same time a negative voltage is applied via the 100 k resistor to pin 3. This negative voltage is determined by the 'Zero adjust' front panel pot. If the signals applied to pins two and three are the same the difference is 0 and there will be 0 V at pin 6.

Let us assume now that we have set the front panel pot to produce 0 V out of the expander board and now the signal level at the 50 ohm input of the log detector goes from -20 dBm to -10 dBm (10 dB increase - for example sun noise) then the output of the detector board goes from +7 V to +8 V. The output of the expander board will now go to +10 V (Vdifference x 10).

This voltage can now be fed to the resistance board to drive the meter as an indication of 10 dB. If the appropriate resistance and meter combination is used this might be set up to represent full scale deflection of the front panel meter.

Example 2: -20 dBm input to detector (that is, pointing at cold sky) results in +7 V at the input to expander board. The zero offset pot is set so there is no voltage on the output of the expander board (that is -7 V at pin 3 of the second LM741). Now a signal of -19 dBm input at the detector appears (that is, 1 dB moon noise as the dish is pointed at the moon). A DC voltage of +7.1 V appears at the input of the expander board, so a DC voltage of 1 V appears at the output. This voltage can now be fed to the resistance/meter combination in such a way that 1 V causes a full-scale deflection. That is FSD = 1 dB.

In a practical application I found that the meter can have a FSD representing as little as 0.5 dB increase in input level and still have excellent stability and accuracy as verified with a HP signal generator as the calibrating source.

The absolute input levels are not critical (provided they are within the useable range of the AD8307). The relative measurements are very accurate provided care is taken in setting up the response of the AD8307 and calibrating the resistance multipliers correctly.

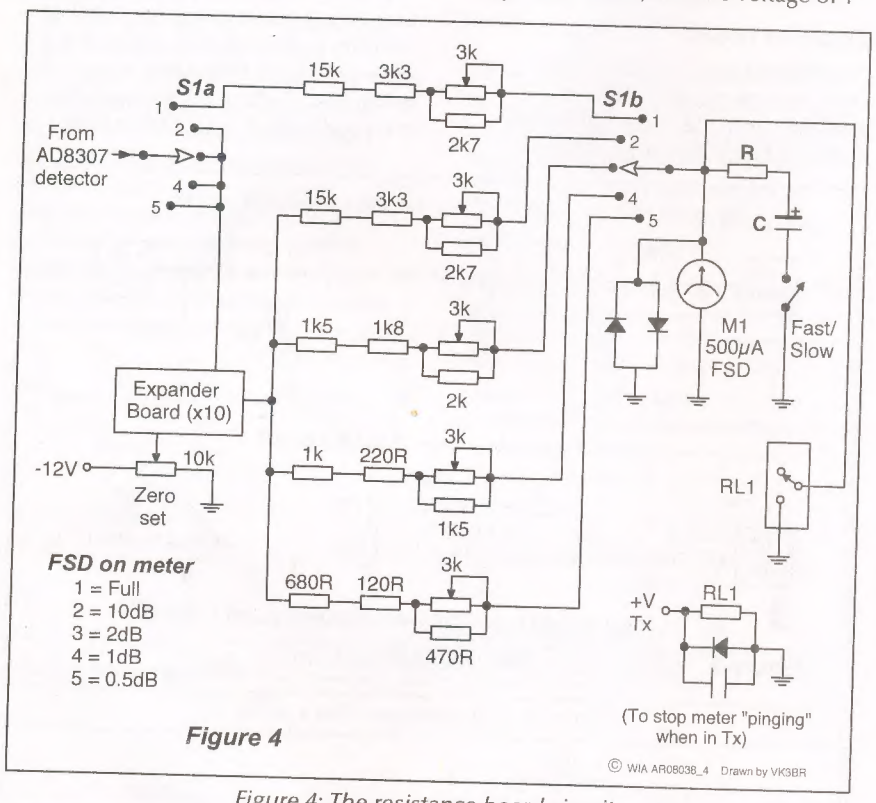

Figure 4

Figure 4: The resistance board circuit.

Resistance board

See Figure 4

The schematic of the resistance board helps show how the various 'blocks' come together. The actual values will depend on the required FSD range and the meter characteristics / specifications.

I used a two-pole five position front panel switch to select between:

Full
10 dB
2 dB
1 dB
0.5 dB FSD ranges.

In the FULL range the 'Absolute' front panel meter calibration is dependant on the gain ahead of the log detector board. It should be calibrated against a very accurate signal generator. The calibration of the meter with the various range selection is linear in fashion. There is a slight variation between devices and in experimenting it was found a lot depends on the absolute input level

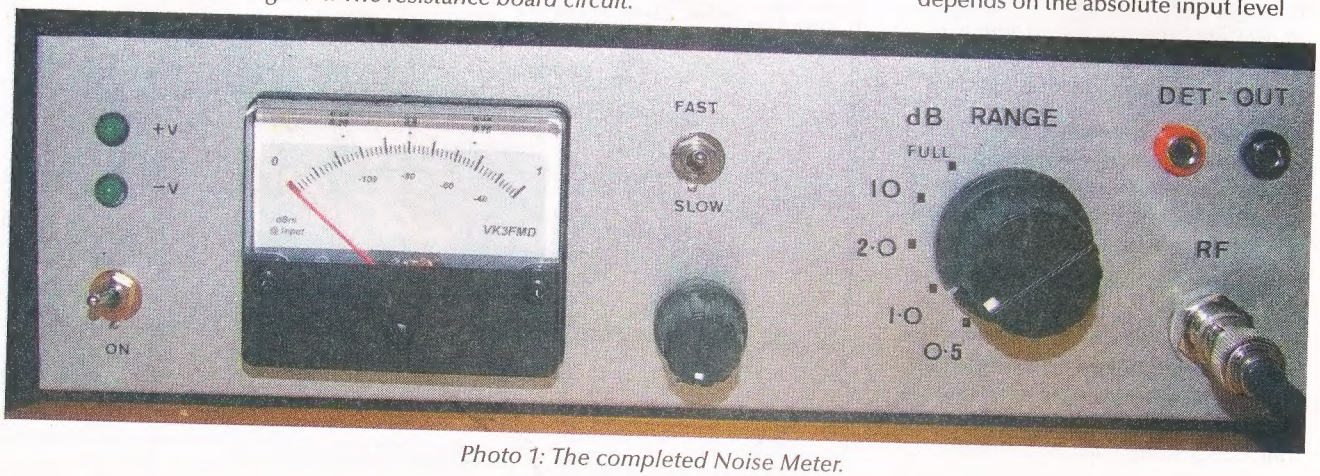

Photo 1: The completed Noise Meter.

and frequency and the setup of the detector board to start with. In my unit I found a maximum error of 5%.

Summary of meter resistance board

For FULL range - Select meter / resistors so 0-10 V gives FSD.

For 10 dB Range - Select meter / resistors so 0-10 V from expander board output gives FSD.

For 2 dB Range - Select meter / resistors so 0-2 V from expander board output gives FSD.

For 1 dB range - Select meter / resistors so 0-1 V from expander board output gives FSD

For 0.5 dB range - Select meter / resistors so 0-0.5 V from expander board output gives FSD

Miscellaneous

Regulated + 12 V and -12 V supplies are required for the various boards as indicated. The Fast/Slow switch is self explanatory and adds a capacitor / resistor time constant for the meter to smooth out movement if required. The 'Anti pinging' relay is a must for Tx/Rx changeovers. The back to back diodes across the meter will help limit voltage across the meter to prevent damage. For accuracy and ease of use the biggest faced panel meter possible should be used. Proper decoupling of RF on all DC lines is required.

The absolute calibration is on the bottom of the meter scale. My unit has amplification such that FSD in the full range is -20 dBm at the front panel RF IN connector. In my EME system, the usual RF input to the front panel BNC is between -60 dBm and -75 dBm depending on the transverter. With 50 dB of gain before the log detector this means the AD8307 is operating around -10 dBm to -25 dBm. Well within specification. A direct DC output at 100 mV / dB (from the detector board) is available at the banana style connectors for use with an external 'recorder' type device.

Practical Implementation

In my EME system I use a receive splitter on the output of my 144 MHz IF of my transverters. This unit has a T/R relay and when in receive mode, it splits the Rx signal into two paths - one signal path goes to my 144 MHz IF radio, the other Rx signal path is further amplified with a MMIC by about 20 dB and filtered with a simple series tuned filter tuned to a centre frequency of 141 MHz.

This amplified Rx signal is then applied to the 'Noise Meter' input front panel BNC. During operation the 'coldest part of the sky' is found with the dish and the meter zero adjust is used to set the reference level in one of the smaller ranges. The dish is then pointed at the moon and it is very obvious in the 0.5, 1 and 2 dB ranges when I have the dish pointed accurately. During EME operation, I 're-peak' for moon noise during receive sequences.

Calibration of the dish azimuth and elevation indication system can then be easily checked and adjusted, or if the calibration is close then manually peaking the dish on moon noise gives absolute confidence that the dish is pointed accurately. With my 'actuator' based system of dish control the noise meter has become a valuable and irreplaceable instrument to carry out EME activity on the higher microwave bands (9 cm and up).

Parts and construction

Coils and capacitors for the band pass filters were sourced from MINIKITS www.minikits.com.au I was also able to obtain the AD8307 IC from there.

Jaycar, Radio Parts and Altronics are a good source of switches and for the miscellaneous parts such as resistors and 741 ICs.

Construction can be 'paddy board' or 'ugly' style or homemade etched PCBs as I have used.

A PCB artwork exists for the 'logarithmic detector' in the DUBUS reference given below.

The RF amplifiers can be any breadboard design amplifier such as a 'universal MMIC AMP' as appears on the Minikits website or, as I have done, a dedicated 'preamp' design for the frequency of choice. If you use an 'untuned' amplifier such as a generic MMIC amp then an additional stage of filtering might be a good idea.

References

1 Logarithmic Amplifier Up to 500 MHz with AD8307. Wolfgang Schneider, DJ8ES. VHF Communications Vol. 32 Summer 2000 –Q2.

2 Data Sheet AD8307. Analog Devices, Inc. 1997 http://www.analog.com/en/rfif-components/log-ampsdetectors/ad8307/products/product.html - quicklinks [It is quicker to Google AD8307]

3 The author's website address is www.vk3nx.com

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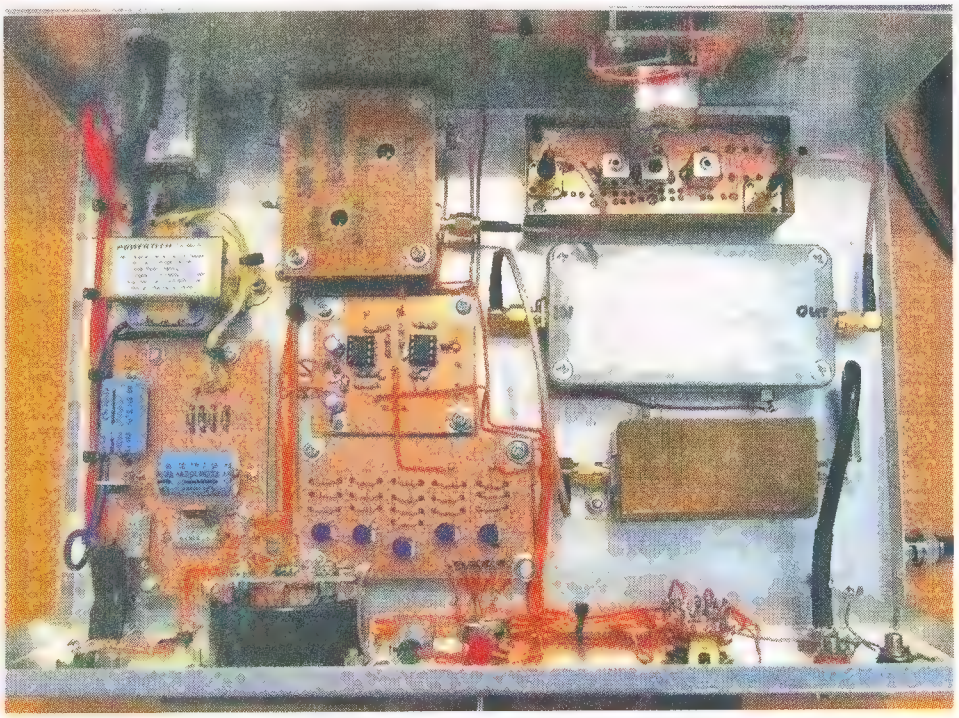

Photo 2: An internal view of the Noise Meter.

Comparing line currents in HF balanced feeders

[redacted]

Introduction

The use of a centre fed horizontal wire antenna with or without an antenna tuning unit (ATU) is probably the most common HF antenna system used by amateurs world-wide. By using an ATU the overall length of the antenna can be made to suit any available space limitations at the home QTH, and in addition, allow operation on any of the HF bands. Such an antenna system means that a balanced feeder and ATU is required.

I have previously published (*AR* April 2008) a balanced ATU suitable for HF operation using a nominal 100 W transmitter. In the antenna system described, the current flowing in each feeder line should be of equal but opposite magnitude for correct balance. The actual value of the current will depend upon your particular antenna geometry and operating frequency, but is not required – we only need the comparison between the two readings. Any difference between the readings will result in some radiation from the feeders which will distort the expected radiation pattern and add extra noise on receive, and maybe even TVI or BCI on transmit.

This article describes a simple unit which will allow a comparison of the currents flowing in each feeder line. The whole unit can easily be incorporated into the ATU, as shown in the photos.

Circuit description

The circuit is designed for use from 2 to 30 MHz with a power rating suitable for nominal 100 W transmitters. Line currents are measured by using two toroid current transformers, one on each line. For RF operation the core will be a ferrite material, which is chosen for operation across the range of frequencies you require. I have chosen a 12.7 mm diameter Amidon FT-50-43 core (Reference 1). Each feeder is passed through the centre of the toroid and forms a single turn primary winding. The secondary consists of 15 turns of 0.5 mm enamelled copper wire (ECW).

As in power line current transformers, the secondary winding should never be left open circuit. The reason is that the secondary impedance is reflected into the primary by the inverse of the turns ratio squared, that is, $1/15^2 = 1/225$. This reflected impedance appears in series with the primary winding. With an open circuit secondary the secondary load impedance is always infinite, so that the reflected primary impedance is also infinite, and the primary then looks like an open circuit – bad news. Similarly, when the secondary load is a short circuit, the additional reflected primary impedance is zero – good news.

A 100 ohm resistor across the secondary helps broaden the frequency response of the transformer, but at the expense of reduced sensitivity. This will introduce an additional 0.44 ohms in series with the primary ($100/15^2$). I have placed a normally closed pushbutton switch (Reference 2) across the secondary when the meter is not being used, in case the 0.44 ohms introduced is significant in a particularly low impedance primary load. It could be omitted if not considered necessary. Power dissipated in the 100 ohm resistor is less than 1 W for 100 W of RF into a balanced 50 ohm system.

The diode detector rectifies the secondary RF voltage and after filtering with the 10 nF capacitor the DC current is supplied to the meter (Reference 3). Layout is left up to the builder – the only stipulation is that the RF section (from the top of the schematic down to the 10 nF capacitor) is kept reasonably compact, but do provide extra RF filtering for any long DC leads. I have included a Hi/Lo sensitivity switch which adds series resistance (R1) in the Lo sensitivity setting. The switch is normally left in the Lo position, but its inclusion in the circuit is optional. You can select values for R1 and VR1 to suit your particular system.

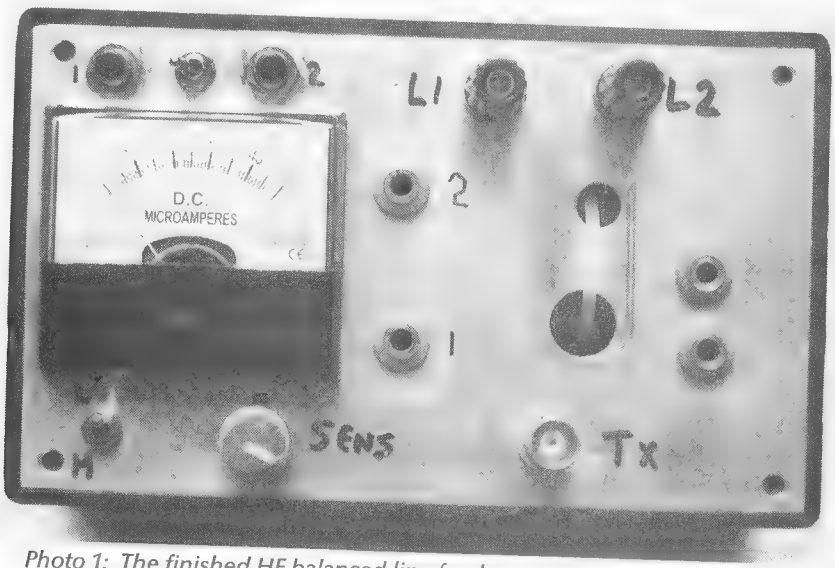

Photo 1: The finished HF balanced line feeder current measurement tuner.

Operation

Make sure the Hi/Lo switch is set to Lo if fitted. At a low power setting, adjust your ATU for best SWR on the chosen frequency and key the transmitter. Any SWR greater than 1:1 will result in some imbalance between readings.

Select L1.

* Push the 'read L1' button.

Adjust VR1 if necessary for a suitable meter reading.

Now select L2.

Freq (MHz)	Power (W)	Lo/Hi Switch	Sensitivity	Meter reading
7.1	100	L	max	25
	50	L	max	20
	10	L	max	12.5
	1	H	max	35
14.1	100	L	max	40
	50	L	max	35
	10	L	max	20
	1	L	max	10
	1	H	max	50+
28.6	100	L	max	45
	50	L	max	40
	10	L	max	20
	1	H	max	7.5

* Push the 'read L2' button.

Check the meter reading. It should be very close to the L1 reading.

If there is a substantial difference (>10%) between the readings you should check your SWR, feeders and antenna for problems.

Reset transmitter power output to your normal setting and check the L1 and L2 readings again, resetting VR1 as required.

* These operations not necessary if the normally closed pushbutton switches are deleted.

Operational Readings

Meter readings obtained with a balanced 50 ohm dummy load.

Freq (MHz)	Power (W)	Lo/Hi Switch	Sensitivity	Meter Reading
7.1	50	L	min	31
14.1	50	L	min	28
28.6	50	L	min	25

The following table of meter readings reflect my particular antenna system, and the power reading from my SWR/Power meter, after adjusting for 1:1 SWR on my ATU. Other antenna systems will have different current through the transformer and therefore create different readings.

Conclusion

The number of turns on the secondary can be changed, but I would not exceed 15 as too many turns can produce self-resonances in the winding.

The diode should be a type suitable as a detector rather than switching.

All components are available from DSE, Jaycar, TTS Systems, Altronics but some single-source items noted in References. See advertiser details in AR.

References

TTS Systems.

Dick Smith Electronics – P 7561.

Jaycar – QP-5012.

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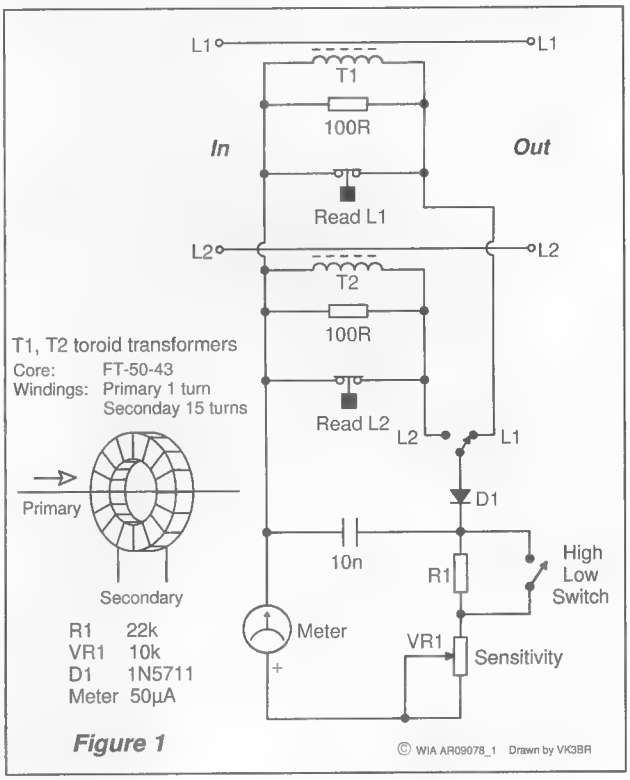

Figure 1: The HF balanced line feeder current measurement circuit.

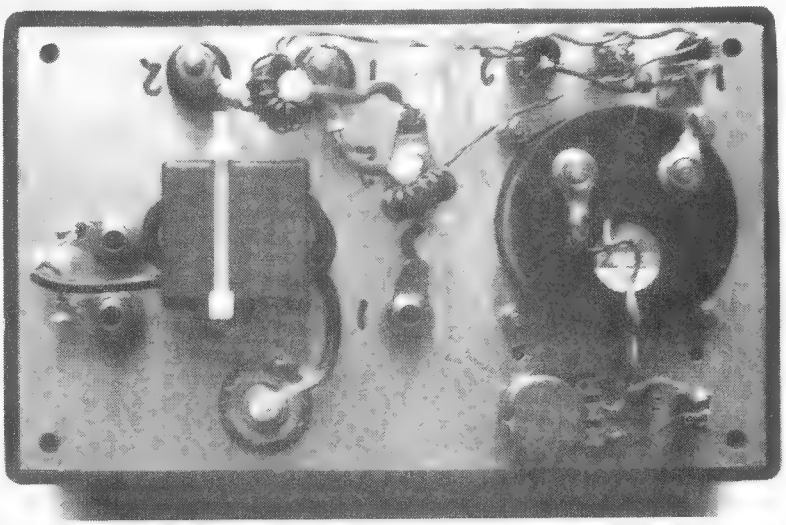

Photo 2: The finished meter, from underneath the cover.

Six metres for Standard class operators

Stuart Birkin VK8NSB

Two years ago I decided to venture onto six metres, and put a quarter wave vertical up in the air. This was around November 2008, ready for what the six metre guys were calling the Magic Band time of the year.

I was already aware of VK LOGGER on the Internet, using it for HF, and had seen the six metre page but had never ventured onto it, thinking it was for Advanced operators only. I actually thought I would be ignored or told to leave if I went on the page because I was a Standard class operator.

However I decided to jump on to VK LOGGER and was amazed to find the guys were quite willing to help out with answers to my questions and willing to have QSOs with me on 52.100 MHz SSB, or split because of the Advanced guys antenna being cut for the bottom part of the band, for 50-51 MHz.

In the Christmas season of 2008 I worked 23 VKs and 2 ZLs on six. When the band closed off around February/ March, 2008 I then went very quiet and did not really bother with it for 2009 – and that Christmas the Magic Band was very poor.

Then, I just happened to come upon a three element Yagi for six metres on VKHAM, purchased it and started working on putting it up on one of the towers I have here - finally got it up around the end of January 2010.

One evening I saw on the DXcluster Mark VK8MS spotted by a JA and thought, wow, six metres is open, so I rushed up to listen and could hear the JA quite clearly on the beam. I was able to talk to Mark later that night and he explained to me about TEP.

I had never heard of it before but was interested in learning more about this TEP. Over the next two weeks I was lucky to work KH2, VR2, JA, DU and BV on both SSB and CW on 52.100 MHz and some further QSOs using split 50–52 MHz. Both Mark VK8MS and John VK8JM helped me with some of the QSOs, asking the operators to go split so that I could make the QSO.

I have noticed one thing on the VK LOGGER and that is there are not many VK Standard class operators active on six metres. Why not? For the guys throughout VK, from VK 1 to VK7, six metres looks fun, with openings all around Australia, and even DX openings.

For myself, with only 100 watts and a three element beam, I have had some really great evenings on six over the last couple of weeks, thanks to TEP. I would say to those Standard class operators out there, give six a go; it is easy to put up a vertical, dipole or even a beam for this band, as it does not need massive space to do so. Get on VK LOGGER and say good day to the guys, they won't bite and you might find you actually enjoy this Magic Band.

I had always said that six was not really for me, as I was a HF DXer and I was not going to get too serious about it, but over the last couple of weeks I have actually enjoyed this truly Magic Band. Give it a go.

Yes, as a Standard class operator you might be limited to the frequencies you can use on the band but you will be amazed how many guys will work you split or even come up on 52.100 MHz to say "g'day".

I now keep my eyes on the six metre chatter in VK LOGGER and the six metre spots on the clusters I monitor.

Take it easy and catch you on six from Darwin, de Stuie VK8NSB.

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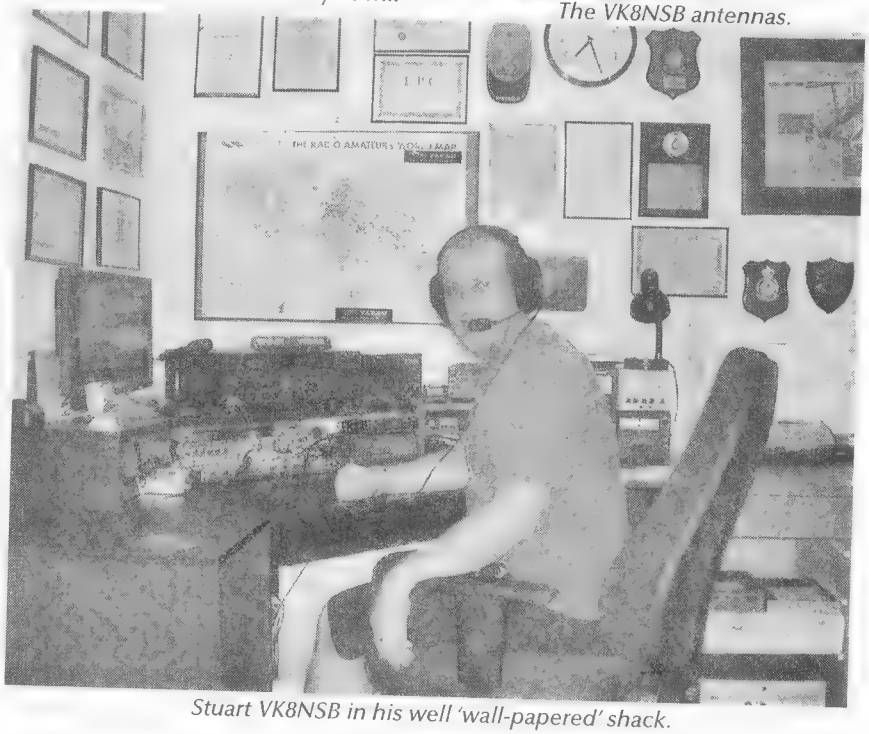
The VK8NSB antennas.



Stuart VK8NSB in his well 'wall-papered' shack.

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Foundation Corner 13:

Is good enough good enough when it is not perfect?

Geoff Emery VK4ZPP

There was a time in the CB circles that the holy grail of station operation was to have a perfect VSWR, a reading of 1.1:1. When you check the difference this elusive ratio provides to the power available for radiation from the antenna to what a 1.5:1 VSWR provides, it is hardly worth the effort let alone the expense. The thought of tuning or matching your antenna system for maximum radiated signal could not be acknowledged. The field strength meter was neglected for the SWR meter.

This, of course, is a focus on one area whilst neglecting the system as a whole. The purpose of our amateur radio station is to be able to contact other amateur radio stations. Our licence conditions tell us the maximum power that we can radiate and sensibly we want the maximum amount of power up the stick and going in the direction we want. By the same token, we have to allow for the whole engineering of the station and all QTHs are not created equal.

Soil conductivity, the climate and topography are all factors over which we may have no control. We may try to mitigate poor soil conductivity by burying wires under our antenna system. We probably cannot control the weather other than by moving QTH, so strike that one. Hills, buildings and even re-growth of trees may cause problems in getting signals where we want.

Use of higher gain antennas is seen as an immediate solution by many to their problems. Okay, what that means is basically putting a lamp housing and reflector around a bare light. The amount of light remains the same but by careful focussing you maximise the output in the direction you want. It is like running an old fashioned movie projector where the lens adjusted the focus of the image on the screen and you could lift or lower as well as rotate the light beam to get the image undistorted on the screen.

Consider the satellite dishes used for TV and internet transmission, for commercial ground stations, broadcast and domestic use. These antenna systems are very precisely focussed on the target signal source. The 'Dish', at Parkes, NSW, made famous in the film, is a manoeuvrable version which depends on the same engineering principles to do its job.

At 'higher' amateur frequencies, say two metres and 70 cm, we can use directional antennas which are physically small and manageable (Geoff, some would consider the 2 m and 70 cm bands to be the region where amateur bands really begin! Ed.). However, depending on our target, say a repeater, you may find the 0.25 wavelength antenna may outperform a new 'you beaut' collinear vertical because the signal is no longer focused correctly to reach the target over the distance and terrain in between.

Similarly, it is often proven that at 40 metres, a vertical 0.25 wavelength antenna will outperform most wire dipoles for DX working. This is because the angle of radiation best suits the ionospheric propagation characteristics of the signal path we wish to use. It is like shining a torch at a mirror to illuminate a distant object.

To maximise this kind of vertical antenna it is best to use multiple radials mounted above ground to form a counterpoise. To maximise the efficiency of the antenna, engineering studies show that a minimum of 120 such radials is needed. That is 1.2 km of wire you would have to spread out from the base of your antenna. Other engineering studies have shown that a minimum of about 16 radials provides the best compromise of efficiency versus cost. You will read papers available on the internet from manufacturers which show you how to use effectively one radial per band of operation.

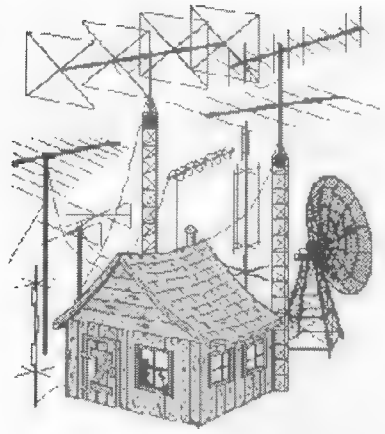
There are untuned antennas being sold which are chosen to be of a length which will not resonate within an amateur band. These are also known as aperiodic antennas. Often a 4:1 balun is used at the feed point to permit easier matching with an antenna matching unit (ATU).

You may see these types of antennas advertised as '....pole' and may be as short as 4.75 metres, from a Japanese manufacturer, to about 13.1 metres, from VK and the USA. Similar non-resonant 'back stay' antennas have been used on boats for years and milspec versions of these antennas sprout from the decks of naval vessels like mushrooms.

Now are these antennas maximised for greatest efficiency? Well, obviously not, but they do work in providing TX/RX capability over signal paths which are useful. The aperiodic antennas give frequency versatility so if you want frequency agility, one of the new automatic ATUs mounted at the base of the antenna with or without a balun transformer may meet the bill for you.

As you talk and learn about the science of antennas and propagation, you are going to stumble over many opinions and arguments as to the merit of different antenna types and configurations.

There are those who claim vertical antennas radiate equally poorly in all directions. There are those that will tell you that multiband antennas



such as the G5RV are compromises. If we all had the real estate and the bank balance we could have all sorts of directive and high gain antennas. How much real estate is there on an eight metre yacht? How much room is there on the hull of an airliner to mount an antenna farm? How much room is there on a cubesat?

There is the need for us to make practical choices and this includes how well the piggy bank has been fed, how much room is available and can we manage the physical structures without bringing in help.

There is no point in having a multi thousand dollar antenna on a tower that we cannot lower by ourselves. Storms do happen. There is no point in planning an eight wavelength HF long wire, if you live in an apartment with just enough room for the BBQ in the lawn area.

Certainly we can work to achieve greater efficiency in our station but think about the average HF mobile installation. Find some efficiency charts for a helically wound or linear loaded antenna on a minimal ground system. If you get 5%, from my reading, you are doing well but people do not complain if it works.

Similarly, I suggest that we should aim for good working stations with clean RF output. Some of the standard text books we amateurs use give us the best case scenario. That is our aim but we should recognise that first we have to have a station that sends and receives signals. After that we should seek to improve what we have.

This probably brings us back to the old question as to what is the best antenna. It may be good manners not to answer a question with a question but this demands it. The best antenna for what, in what location, single or multi-band use are the obvious modifiers to the initial question.

There is no simple answer until the rest of the parameters are known. Just maybe for you and me, the best antenna is the one that we made ourselves and have learned its benefits and experienced its limitations – we have the benefit of experiential learning to supplement the book learning and these will help us decide on what will be our next project.

I have had people argue on the basis of book learning (?) that what we were using would not work. Too little understanding of the amateur station and its components as part of a communications system will stop you gaining knowledge. Amateur radio is fun and it is each of our tasks to enjoy our part in it.

Just a final reminder; I have touched on many areas of the technology and not given any references. Consider that a bit of homework to ferret out more detail on the areas that interest you. **ar**

TET-EMTRON

News Flash!

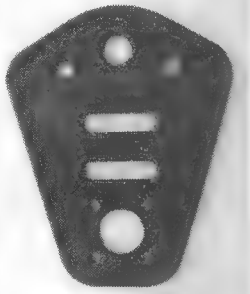
OPEN DAY

TET-Emtron in conjunction with **Tower Communications** is having an open day on Sunday, 23rd January 2011. On display will be a variety of antennas, home brew parts and HF gear. We will have different radios hooked to different antennas for trial.

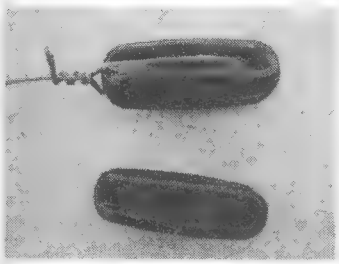
⇨ It is hoped the new ICOM-9100 will be released before hand and be available on the day.

⇨ A sausage sizzle and tea and coffee are provided free, and soft drinks are available. Shed is air conditioned.

⇨ Doors open at 10.00 am, and close when you all go home. Anybody interested in radio is welcome.

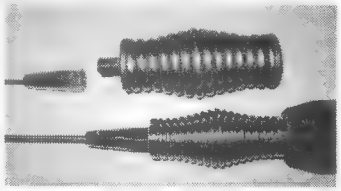


Dipole centres

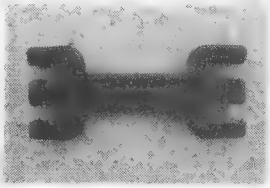


Insulators

HF chokes



Codan and Barrett parts



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A truly wintery Winter Field Day June 2010

Phil Derbyshire VK2FIL

We decided to hold our field day (week end) activities at a location just north of Grenfell at the Grenfell repeater site. This is in the western part of the central tablelands area of NSW. The call sign used was VK2FIL. Those who took part were Paul VK2WPT, Colin VK2FABV and Phil VK2FIL. The 24 hour multi section of the contest was operated.

As this was our first outing we decided it was going to be a bit of a test for future contests from the same spot. The site was found to be excellent from a number of points and we could work signals from all directions on all bands except one. The only real problem direction was from Mt Canoblas for the six metre band only. This was in the form of TV noise from the TV transmitters on that site. The other bands were found to be extremely quiet.

The weather was very cold, about 2°C plus the chill factor, and windy at times, with light rain and extreme fog.

The station was housed in a caravan to get away from the cold and wind. Bands worked were six and two metres, and 70 cm. The output was 100 watts on all bands. The aerials used were a six element beam on six metres, a 14 element beam on two metres and a 16 element beam for 70 cm. There was also an eight element two metre beam, vertically polarised - yuk!

Power was from batteries for the radios and 240 V from a generator, for the rotators and lights. Heat was derived from a rather large bonfire.

Stations worked in the main were from the south, from Canberra and into Victoria. We did work into the central coast and into Sydney and the southern coastal areas of NSW. We could also hear stations in South

The general arrangement of the camp site.

Up goes the six metre beam.

Australia, at quite workable levels, but for whatever reason no response came from that neck of the woods.

ar

Fog – and lots of it.

Part of the station – all of the comforts of home!

Running repairs by Phil VK2FIL and Colin VK2FABV.

ELECTRONICS ONE-STOP-SHOP

Ultrasonic Antifouling for Boats NEW

Many of you know that you can buy $3-8,000 imported marine growth electronic antifouling systems. Jaycar, with Silicon Chip have developed a similar system based on this technology and information in the public domain. This project uses the same ultrasonic waveforms and virtually identical ultrasonic transducers mounted in sturdy polyurethane housings. By building yourself (which includes some potting) you save a fortune! Standard unit consists of control electronic kit and case, ultrasonic transducer, potting and gluing components and housings. Research reveals only one transducer is needed for boats under 40ft. Basically all parts supplied in the project kit including wiring.

- 12VDC
- Suitable for power or sail
- Could be powered by a solar panel/wind generator
- Available end of October - call first for availability
- Price includes epoxies

$249.00

Chip Quik SMD Removal Kit NEW

CHIPQUIK

Desoldering SMD chips can be very tedious and risky. Most of the time you don't even bother due to the risk of destroying the component or lifting the tracks on the PCB. Chip Quick is a low melting point solder product that maintains the molten state of a row of pins. It even works on PLCC chips. Essential rework tool for anyone who uses SMD components. 1cc lead-free alloy kit will remove 8 - 10 SMD PLCC chips.

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J-B Weld Epoxy

J-B WELD

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UGlu Industrial Glue Strips NEW

Make quick repairs without tools. Simply cut a strip to the size you need, then fix just like double-sided tape to create a permanent, instant bond. Bonds to just about anything, even rough surfaces. Non-toxic, acid free, no mess. Millions of uses at home, office and workshop. Pack contains eight 75 x 30mm strips.

- Strength of glue, convenience of tape
- Instant bond, permanent hold
- Waterproof and weatherproof
- Made in USA

$7.95

Semiconductor Component Analyser

Intelligent semiconductor analyser that offers simple identification and testing of a variety of 2 or 3-pin devices. Type and lead identification as well as forward voltage, test current and other parameters for transistors.

- Automatic type identification of BJTs, Darlington, MOSFETs, JFETs, triacs, thyristors, LEDs, diodes and diode networks
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Jaycar electronics

An RF voltmeter for transceiver servicing

Jim Tregellas VK5JST

I recently needed to re-align an old Yaesu FT One transceiver, and promptly found myself in trouble. The manual demands that a whole bunch of AC voltages must be measured and set up and I did not have an RF voltmeter. Further, this type of voltmeter cannot be bought off the shelf at the usual retail supply outlets and are quite expensive on the second-hand market. So, out came the calculator and soldering iron.

Typically the voltages to be measured lie in the HF/VHF area and have magnitudes from 100 millivolts to a few volts. Checks must be made on VHF oscillators and similarly sensitive circuits and so it is vital that test gear has a very low input capacitance and high input resistance. The usual approach to this problem is to rectify the RF with a simple diode probe, and display the resulting DC on a DVM. Several good probe designs have been published in AR recently. Unfortunately, such probes have a very non linear response to low AC input voltages and so a calibration chart is necessary. Under these conditions diode turn on potentials become very significant and this is particularly the case for input levels below 200 millivolts RMS. Even a germanium point contact diode (still the best HF/VHF detector diode despite all the hype about Schottky diodes) has a turn on potential which is relatively very large at these low voltage levels.

Photo 1: The RF voltmeter and its test probe.

One of the half truths floating around the electronic world is that diodes have a turn on potential and are off below this figure. The voltages usually quoted are around 200 millivolts for germanium and 700 millivolts for silicon. At normal load currents of a few milliamps these figures are fair enough, but if the diode load resistance is very high, then the turn on potential is actually zero, as the current /voltage curve is very smooth and extends right down to zero at the graph origin. The germanium point contact diode is best, simply because the turn on potential is lowest at normal currents and it has a very low junction capacitance. Further, germanium is inherently faster than silicon due to higher carrier mobilities.

One very severe disadvantage of readily available very fast semiconductor diodes is that they all have low peak inverse voltage ratings. The PIV rarely exceeds 100 volts and so a half wave rectifier circuit using such a diode cannot cope with an input much in excess of 30 VRMS. The 1N34 diode used in this instrument has a PIV of around 70 volts depending on manufacturer.

The basic specifications of an RF voltmeter which uses such a probe

start to emerge. This instrument covers an input frequency range from below 200 Hz to above 200 MHz, has an input capacitance of about 1.5 pF, and an input resistance of 5 MΩ (almost irrelevant in comparison to the capacitive loading). The electronics which follow the probe must compensate for its gross non-linearities at low input voltages, and the resulting accuracy should be better than, say, 5%. Unless you wish to wreck the voltage probe, do not allow the input voltage to exceed, say, 20 V RMS.

How it works

The process starts with the voltage probe just described. A 1N34 germanium diode rectifies the incoming AC and stores its peak value in C1. Note that such a half wave probe system assumes a DC return path through the circuit under test. This is almost always there with a resistance value well below 50 kΩ, but the user should definitely check that such a path exists. It can go directly to ground, or via a positive or negative rail, but must be there. Because the instrument has an input resistance of around 5 MΩ, a 50 K source resistance will not upset the accuracy by more than 1%. The rectifier system is followed by a 470 kΩ resistor and several hundred picofarad of capacitance in the shielded microphone cable, which together form a low pass filter to remove any RF from the rectified DC output of the probe. The resulting DC is then applied to the input attenuator of the instrument. The instrument is structured to compensate for probe diode non-linearities for input voltages up to 2 VRMS. Beyond this figure (2.8 volts peak) the probe output is quite linear because the diode turn on potential rapidly becomes negligible.

A commonly published scheme to compensate for diode non-linearities in input circuitry is to place a matching diode in the negative feedback path of a following operational amplifier.

Unfortunately, this approach does not work too well, as the detector diode in the probe works under pulse conditions while the diode in the feedback path works under continuous DC conditions. After a lot of network analysis, the very simple addition of R11 and R12 was developed, and this keeps the whole system linear within 5%, down to 80 mV RMS. Below this figure the square law response of D1 again rears its ugly head, and at an input of 50 mV RMS the instrument indicates 45 mV (10% error).

Returning to the input attenuator, the DC resulting from all input voltages beyond 2 VRMS is attenuated to avoid overdriving IC1. Further audio /RF low pass filtering is provided by R9 and

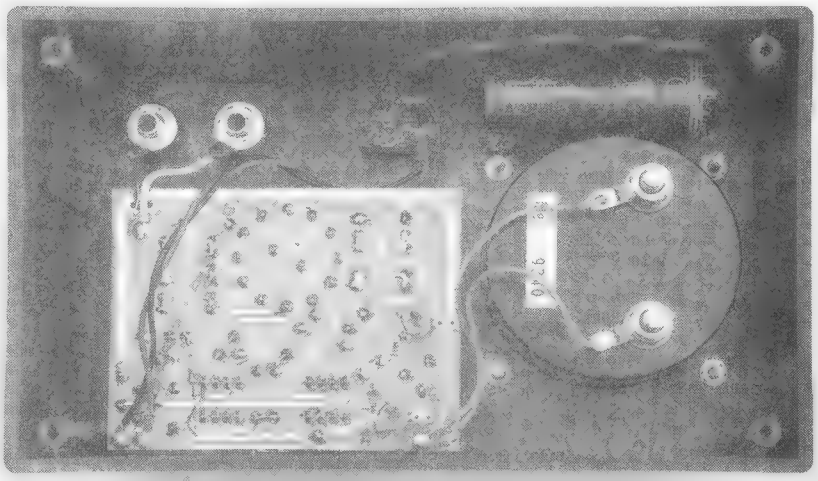

Photo 2: The rear view of the RF voltmeter showing assembly details.

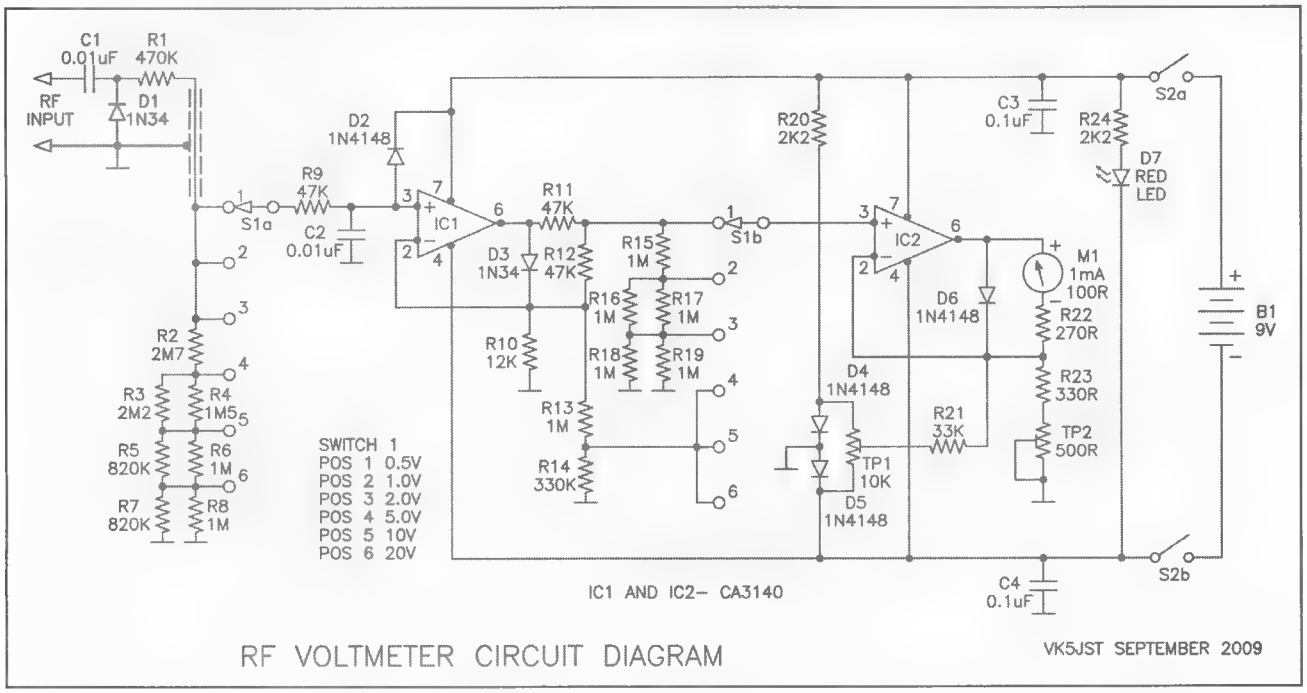

Figure 1: The RF voltmeter circuit.

C2, and D2 prevents possible damage to IC1 due to high probe output voltage.

The end result of the first half of the circuit is that at full scale on any range, a voltage of about 540 mV dc appears at the wiper of S1b, which in turn appears across R23 and TP2, generating the FSD meter current. Protection against violent 'meter bashing' is provided by D6 which turns on hard when the meter current exceeds about 1.5 milliamp. In a single rail operational amplifier circuit with its output at ground potential, input offsetting (zero setting) circuitry cannot work properly because the output cannot go negative with respect to ground. A low voltage negative rail (around 0.7 volts) is therefore provided by R20 and D5 so that this feature works correctly. Total current drain for the circuit is around 11 mA, giving good battery life, particularly if the unit is operated from AAA rechargeable cells.

Different meters can be used provided the values of R22, R23 and TP2 are appropriately adjusted.

For a 100 uA movement, R23 is 3K3 and TP2 is 5K. R22 should be selected so that the total value of it and the meter internal resistance is around 3K7. For 50 uA movements, these figures are 6K8, 10K, and 7K4 respectively.

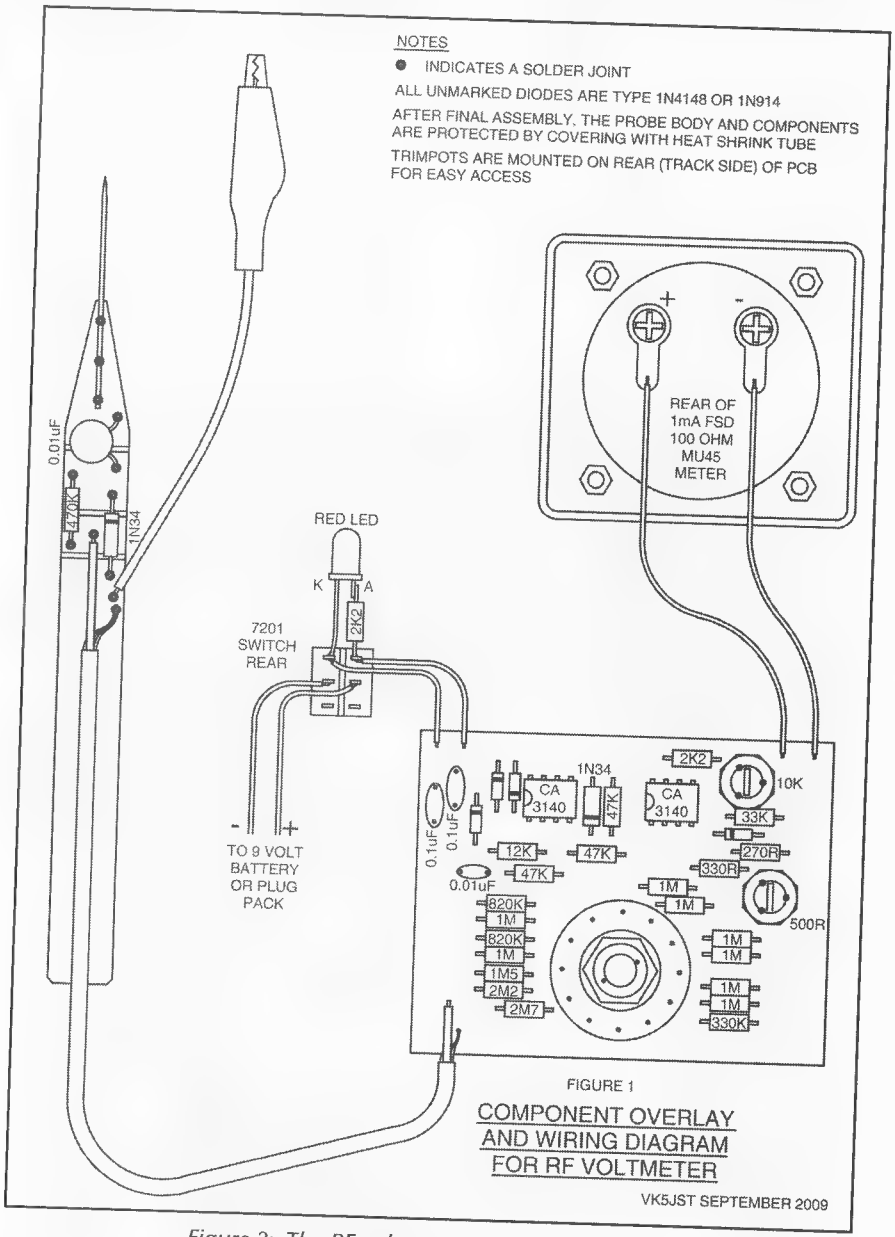

Figure 2: The RF voltmeter component overlay.

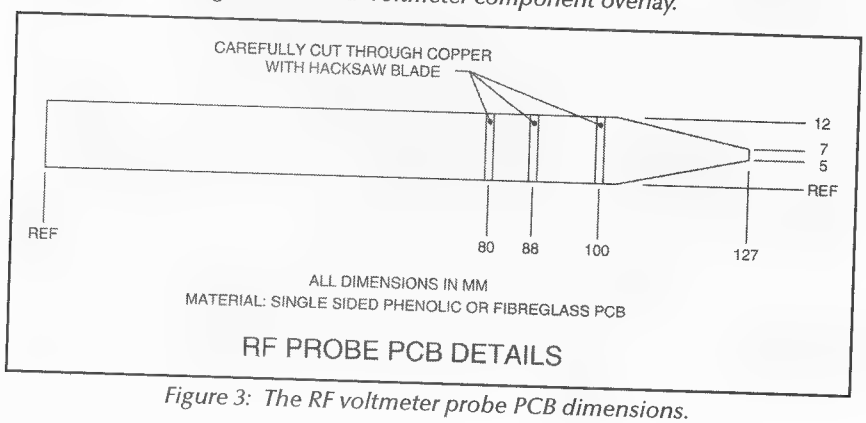

Figure 3: The RF voltmeter probe PCB dimensions.

Assembling the unit

First make your printed circuit boards. The main single sided PCB can be made from the pattern shown elsewhere in this article by whatever method you favour. The iron-on resist film available from Jaycar is excellent, and an alternative much cheaper method using clay surfaced paper can be found on the author's home page at http://www.users.on.net/~endsodds The probe PCB is probably best made by just grabbing a piece of PCB, cutting it to shape and generating the insulated pads to which the components are soldered by means of hacksaw cuts.

Next make the front panel label by photocopying the pattern elsewhere in the article. For long life have the label laminated professionally with plastic film to protect the surface. Use the front panel label as a template to mark out the rear of the UB1 plastic box for drilling. Drill all holes in the box rear, and then cover the rear of the front panel label with double sided adhesive tape. Do not remove the protective paper from the tape. With a very sharp pointed hobby knife exactly cut out the hole provided in the front panel label for the rotary switch. Place a well fitting drill in the switch hole in the box and remove the protective paper from the double-sided adhesive tape on

the label rear. Now place the switch hole in the front panel label over the drill, and use the drill as a guide to exactly position the label while you stick it to the box. Last cut all remaining holes in the front panel label using the box holes as a guide.

Assemble both printed circuit boards as per the component overlay. Use 60/40 lead solder. The unleaded stuff is incompatible with most components sold and has been banned by military establishments throughout the world because soldering temperatures are high and board damage is a possible outcome of any repairs.

Assemble the main board starting with the lowest profile components and ending up with the rotary switch. The printed circuit has been laid out for the most commonly sold variants of the plastic rotary switch, but check your switch and the way each common terminal relates to the other six possible switch positions. It may be necessary to drill additional holes in the PCB for the common switch terminals because there are six possible variants of this switch.

Use proper static handling procedures when you place the two CA3140 FET op amps into their sockets. Install the main PCB assembly in the case together with the meter, on/off switch, power lead and optional input terminals. Complete all wiring as per the component overlay.

Testing and setting Up

Before switching on, use the set zero screw provided at the front of the meter to set the meter needle to zero. Set the instrument to its 500 mV range, plug in the probe and switch on. Immediately check the total current drain which should be between 7 and 15 mA. The meter needle should remain near zero (within 10% of the total scale length) if all is well. Adjust the meter for zero reading (op amp balance) using the 10K 'set zero' trimpot.

If the meter cannot be set to read zero, or wanders about badly after a short settling period, you have leakage problems. This could be due to a dirty PCB, a leaky protection diode D2, or a damaged op amp. With an input resistance of 5 MΩ, it only takes a few stray nanoamps to badly unbalance IC1 and upset the instrument zero reading.

The instrument is quite flat down to 1 kHz and most digital voltmeters on their AC voltage ranges are accurate up to at least 1 kHz, so

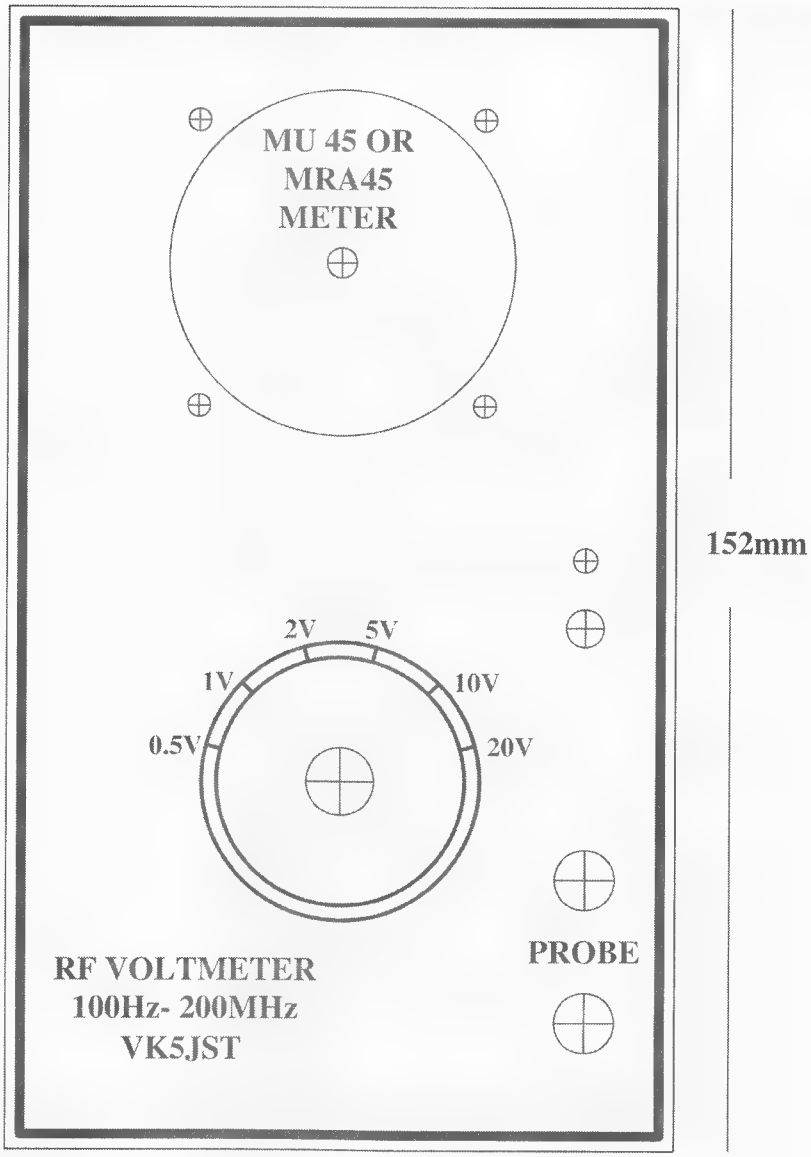

Figure 4: The RF voltmeter front panel drawing.

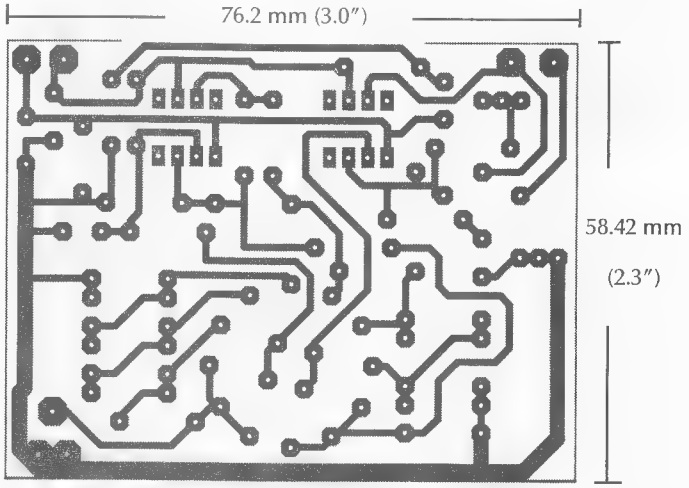

Figure 5: The RF voltmeter main PCB.

Construction Note.

Due to the small size vagaries that are inherent in our printing process, constructors using the templates on this page should photocopy the illustrations, and, using the dial-up enlargement/reduction facility on the copier, ensure that the image they use is physically dimensioned exactly as the marked dimensions on each illustration.

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an audio generator and DVM can be used to accurately calibrate the instrument. The audio generator should be set to an amplitude of 500 mV RMS using the DVM. But check your DVM specifications - some DVMs are only flat to a few hundred Hertz. Connect the probe to the audio generator output and switch on. Set the meter to read full scale using the 500 Ω 'set FSD' trimpot. Check that calibration on the other ranges lies within 5%.

Final notes

The value selected for C1 in the probe is a large compromise. Self resonances in this capacitor can interact with the inductance of the probe earth lead to cause nasty peaks and dips in the instrument response.

Under test, the value of 0.01 uF used in the probe gave a flat output to 200 MHz, with a rising response then occurring to 350 MHz, beyond which it rapidly rolled off. This was measured using a 50 Ω source, a good quality disc ceramic capacitor for C1 and an earth lead length of 60 mm.

With a larger value for C1, say 0.1 or 0.22 uF, the probe can be made to work down to the very lowest audio frequencies (10 Hz) much extending the usefulness of the instrument, but its high frequency performance will then be severely compromised.

So if you want to use the unit for audio work as well as for RF, construct C1 from two good quality capacitors in parallel - say 0.22 uF in parallel with 0.001 uF. And remember the iron rule at VHF - keep earth leads on all instruments very short if you want to make accurate measurements!

Finally, please note that like many AC measuring devices, this is a peak responding instrument which has been calibrated in RMS terms. If the waveform being measured is not a reasonable approximation of a sine wave, then the meter reading does not mean much.....

Good measuring!

RF voltmeter parts list

Resistors - 5%, 0.25 watt

1 @ 270R
1@ 330R
2@ 2K2
1@ 12K
1@ 33K
3@ 47K
1@ 330K
1@ 470K
2@ 820K
8@ 1M
1@ 1M5
1@ 2M2
1@ 2M7

Semiconductors

2@ 1N34 or equivalent
4@ 1N4148 or equivalent
2@ CA3140
1@ Red Led

Capacitors

2@ 0.01 uF 50VW disc ceramic
2@ 0.1 uF 50VW disc ceramic

Trimpots

1@ 500R PCB mounting (Jaycar RT4352 or Altronics R2476B)
1@ 10K PCB mounting (Altronics R2480B or Jaycar RT4360)

Switches

1@ 2 pole 6 position rotary (Altronics S3022 or Jaycar SR1212)
1@ DPDT subminiature C&K type 7201 or equivalent

Hardware

1@ probe PCB
1@ main PCB
2@ 8 pin DIL IC sockets
1@ knob to suit rotary switch
1@ meter -1 mA FSD 100 ohm internal resistance- type MU45
1 metre of thin shielded microphone cable
1@ crocodile clip
1@ sewing needle
1@ plastic box type UB1
1@ front panel label
Heatshrink tube, solder, hookup wire
1@red 4 mm plug and socket (optional)
1@black 4 mm plug and socket (optional)

Winners all over

South East Radio Group

Andrew McKinnis VK5KET

About 20 amateurs attended the South East Radio Group AGM on 20 August at the club rooms in Mount Gambier. After the minutes of the previous AGM were read and accepted, the President Charles VK5HD, reported on the year's activities and thanked everyone who supported him and the club over this time.

Charles especially thanked Trevor VK5NC who was not seeking re-election to the Education and Assessor's role. After 15 years Trevor is having a well deserved rest. The club has some candidates who are willing to assume the role. Trevor's contribution to the role, to the club and to amateur radio in general over many years has resulted in many new amateurs gaining their licence, many have gone on to upgrades as well.

After all the reports, Charles performed his last official duty and presented the two club awards.

The President's Shield was instituted in 1998, the shield presented to SERG by the then club president, Dr Kevin Johnston VK5KJ, now VK4UH. This is awarded by the Club President to a SERG member in recognition of outstanding effort, commitment to promoting the group's activities or to amateur radio in general. This year, the award is shared by two members, Tom VK5EE and Wayne VK5ZX, in a split decision. In Wayne's absence, Tom VK5EE accepted for both.

The Roy Goodwin (VK5AXV SK) Shield is given by the Club President to the Foundation call member who excels in promoting the hobby through his/her activity. This year the shield was awarded to Ian VK5FNBL who is visible at all club events, assisting at every available opportunity. Roy Goodwin was a very keen VHF/UHF enthusiast and the family were very pleased to have him so remembered.

VK5HD and VK5EE.

John VK5DJ took the chair to oversee the elections, declaring all positions vacant. For many years, Eric VK5LP (another keen VHF/UHF enthusiast) has been the club's Patron and we were honoured once again to be able to appoint him as Patron.

The ensuing electoral process saw Charles VK5HD being returned as President, David VK5HDW accepting the Vice President's role, Andrew VK5KET being returned as Secretary and James VK5HJP taking on the Treasurer's role. Wayne VK5ZX, John VK5DJ, Tom VK5EE, David VK5DG, Greg VK5ZGY and Ron VK5AKJ took up various committee roles.

VK5HD and VK5FNBL.

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Team GARC Winter Field Day Success

Tony Collis VK3JGC

Along with the continued successes of the LUMEG team, as VK3UHF, we can now add the team of VK3ALB which comprises Lou VK3ALB, Nik VK3BA, Peter VK3APW, Michael VK3MIC and Jenni VK3FJEN who won the multi operator Winter Field Day competition (8 hr) and came third in the Multi operator section (24 hr).

ar

Lou VK3ALB.

Jenni VK3FJEN.

Nik VK3BA.

"Older than amateur radio in Australia"

Alfred William Herbert Chandler VK3LC - SK

1 June, 1905 – 1 September, 2010

Ron VK3AFW, Publicity Officer for the M&DRC.

Australia's oldest radio amateur has become a Silent Key. We have had others who were still on air at 100 plus years but Alf was the oldest when he died. This is a shortened version of an article on the Moorabbin and District Radio Club website.

In 1920 when Alf was 15 and a student at Scotch College, he built a crystal set but official broadcasts in Melbourne had not commenced and the local experimental stations were not strong and those in Sydney were too distant for this receiver.

Alf then built a one valve set which was much more sensitive. By 1923 he had got up to a three valve set and it was on this set that he heard the initial broadcast from 3LO Melbourne with Dame Nellie Melba as the featured vocalist in 1924.

In 1924 Alf took a correspondence course in wireless telegraphy with the Marconi School of Wireless in Queen Street, Melbourne. In 1925 he was called up to the Marconi School in the AWA building in Queen Street, Melbourne to finish his course with more CW training and practical experience in using and fault finding wireless station equipment. After qualifying as a First Class Commercial Wireless Operator, Alf took a job with a firm called 'Crystal Clear Radio' as their wireless set maintenance employee and salesman at five pounds per week.

In 1926 Alf applied for an amateur licence and was given the call of OA3WH. His first transmitter was in a wooden rack 1.83 metres (six feet) tall and 0.58 metres (21 inches) wide. He was quite active on the 30 and the 80 metre bands. The equipment used at that time was all home brew, the power supplies, one 350 volts and another 1000 volts, occupied the bottom section. The next layer housed the oscillator, a tuned plate tuned grid crystal controlled oscillator using a 201A valve, then in the next was the buffer stage, and above was the final amplifier, 100 watts using a 210 valve. Each stage was link coupled. The antenna used was a centre fed Hertz with 600 ohm tuned feeders. Alf installed a 240 volt pilot lamp across the centre of the antenna which lit up when he pressed the key. Of course the neighbours wondered what the flickering light was all about.

After leaving Crystal Clear Radio in 1927 Alf started his own business, Beaumaris Radio Service, but in 1929, as things were not going too well, he joined the family business D & W Chandler (hardware merchants). He was paid three pounds ten shilling a week and ran the radio department. Alf married his first wife Iris in 1933 and they had 50 happy years together.

His years at D & W Chandler were not without some disagreements over management and procedures and after eleven years, in 1940, he enlisted in the Royal Australian Air Force (RAAF).

The Marconi training stood him in good stead. He was taken into a mustering of Wireless Operators and was posted first to rookies training at Point Cook, and then to number one Wireless Air Gunners School (1WAGS) at Ballarat, Victoria and later to Townsville and Cairns.

Alf VK3LC in his shack in 1989

It is strange to think of it now, but Beaumaris was still on the edge of the 'Bush' in those days. A bushfire destroyed much of the suburb including the Chandler family home at Beaumaris on 14 January, 1944 and Alf lost all his early radio memorabilia.

The war ended, Alf was discharged after five years service and some six months later he opened a hardware business

in High Street, Armadale where he traded for 16 years. After selling the business, Alf did not feel ready to retire so he spent two years with the ABC as a radio technician.

In 1955 Alf attended a re-union of 1WAGS personnel where Fred Bail VK3YS, Roth Jones VK3BG and Peter Lempriere VK4ALL were talking about how they were working DX on 20 metres. The bug bit again, so he applied to the PMG for a licence and call sign, and was allotted VK3LC.

He joined the Moorabbin and District Radio Club (M&DRC) in 1959, and became Secretary in 1960, serving three years until 1963.

His radio operation led him to many a lifelong friendship with amateurs the world over. Perhaps the most notable one was with King Hussein of Jordan, also an amateur radio operator (JY1), after they first made contact in 1927.

Some 50 years later the King visited Melbourne and stayed with Alf at his home in Beaumaris and in turn Alf was a guest of the Royal family at their palace in Jordan. Alf also visited many other overseas amateur radio friends and a number of them also visited Alf.

Some 50 years later the King visited Melbourne and stayed with Alf at his home in Beaumaris and in turn Alf was a guest of the Royal family at their palace in Jordan.

From 1963 to 1970 Alf was a volunteer member of the publications committee of the WIA AR magazine. In 1967 he became VK3 co-ordinator of the WIA Intruder Watch and in 1979 became Federal and Region 3 Intruder Watch Co-ordinator, until 1982. Alf's approach to these intruders was typical. He recorded representative sounds of some of the harder to identify signals such as multiplexed RTTY and played these with comments on the weekly WIA broadcasts. He enthusiastically exhorted listeners to send in reports of intruders and as a result many illegal transmissions were stopped.

In 1978 Alf was given the Ron Wilkinson Achievement Award for his work in intruder watch activities.

In 1983 Jim Linton, President of the Victorian WIA Division, presented Alf with a silver medallion for meritorious service to the Victorian Division.

In 1984 David Wardlaw VK3ADW, the Federal President of the WIA, presented Alf with a silver plaque which reads 'In appreciation to Mr A W H Chandler, VK3LC, for his long term 1975 to 1982 contribution as Regional Intruder Watch Co-ordinator IARU Region 3'.

Alf again served as M&DRC Secretary from 1984 to 1987. He was made a life member of this club in 1992.

In his 80s, Alf met and married his second wife Elise and they were inseparable. Alf and Elise were regular attendees at M&DRC Tuesday meetings and RAOTC luncheons until Alf was in his late nineties. Elise passed away just before Alf's 105th birthday.

His 100th birthday function was attended by the Kingston City mayor Councillor Topsy Petchey, the local press and representatives of the WIA and the RAOTC.

Alf had always been known as someone who prefers to get on with the job and summed up his philosophy with the following statement: 'In life you've got your talkers and your doers. I'm not one of the talkers.'

Thanks Alf for a life well lived.

References

Documents and photos supplied by John Chandler.

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Scotch College (Regis Profiles Winter 2010 edition

Wikipedia

Amateur Radio Magazine January 1971, December 1973, January 1974, January 1977.

http://mdrc.org.au/

Compiled by Ron VK3AFW, Publicity Officer for the M&DRC.

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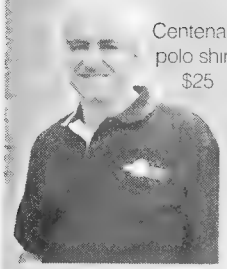
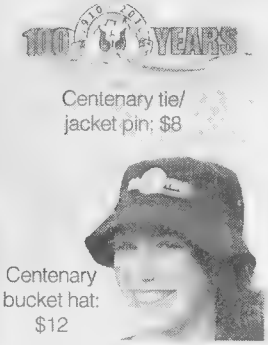

Centenary polo shirt $25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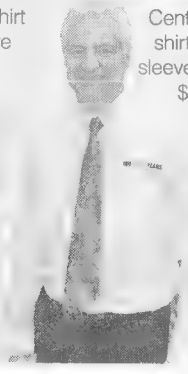
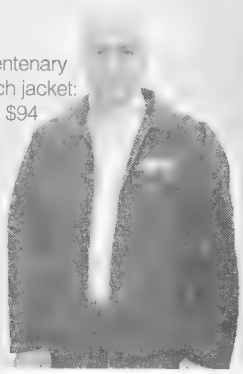
Centenary shirt short sleeve black: $32


Centenary shirt long sleeve white: $33

Centenary shirt long sleeve black: $33

Centenary fleecy vest: $35


Centenary ranch jacket: $94

VK100WIA - From Cradle to Devonport

A VK100WIA report from the Cradle Coast Amateur Radio Club Inc.

David Cleland VK7DC

When club members heard about the upcoming WIA 100 year celebrations and the possibility of using the special event callsign VK100WIA, wheels were put into motion to procure a spot in the WIA roster and organize a suitable location. The end result was a confirmation from the Devonport Maritime Museum which generously provided ample space and put other facilities at our disposal for the three day allocation we received.

The Devonport Maritime Museum is the original residence of the Devonport Harbour Master, and is located near the mouth of the Mersey River where the *Spirit of Tasmania* berths.

We were treated by the staff and volunteers as if we were royalty and we are looking forward to doing another event there sometime soon. Anyone touring Tasmania, make sure to look through this wonderful museum that is full of magnificent model boats and ships plus truck loads of Tasmanian and Australian maritime history and photos; and there are no restrictions on using your camera inside the museum.

The museum staff were so excited about our event that they put up a flag message on the 20 metre tall signal mast in front of the main building. The flags read "WELCOME CCARC BZ WIA 100 YEARS" the letters "BZ" being international Naval Code which stands for "WELL DONE"

The Cradle Coast Amateur Radio Club operated the VK100WIA call sign from Sunday 5 to Wednesday 8 September. First up Sunday morning we were greeted by heavy continuous rain. Brian VK7KBE was the first one on the phone and radio to some of the operators of the day, as it was his job to erect all the wire in the sky and 'no way am I climbing trees in this rain' was the main topic of conversation.

'What are we going to do then? We go on air in two hours; I will bring the Squid Pole antenna and hope for the best' was the reply from Wayne VK7FWAY. He arrived with his new toy, the very impressive FT-1000MP (almost as good looking as the TS-950SDX).

The squid stick was installed and all cables run. The bands were a little quiet for the first couple of hours and then Wayne started to get amongst it as conditions improved, while David VK7EX and Keith VK7KW setup the display of older ham gear and some home brew equipment.

Come Monday morning the weather was much better, and we also thought that it would be a good idea to set up a 2 metre station at the museum. David VK7EX put his hand up for that job and prepared all that was needed the night before, then loaded up his gear and headed off with plenty of time to spare on Monday morning.

Approximately 5 km from home 'Murphy' tapped on his rear window and said, are you listening to me boy, you have left the 213 cable at home.

Instant cold sweat and panic mode set in. Where the hell is the next off ramp? Up ahead, Forth River Bridge, pedal to the metal and heading for home, screaming halt in the driveway, cable in the boot and smoke 'em up in reverse down the drive, heading in

The signal hoist welcoming CCARC and the WIA Centenary.

David VK7EX with his display of old gear.

Wayne VK7FWAY making a contact.

Wayne VK7FWAY and Anne VK7BYL.

the right direction once again and arrive half hour late and put it all on line, using the mobile antenna on the car as the antenna system. That ended up being a waste of time, as we made two contacts only that day on 2 metres.

Anne VK7BYL arrived early Monday morning and shared the FT-1000MP with Wayne all day and made some top contacts. Of course, while all this was going on we had the general public coming through for a look at the museum.

There was one lady that pricked her ears up when she heard a VK4 contact mention the town where she lived, having not long left there to come down to Tasmania for their holidays, so she became very interested in what we were doing.

Tuesday morning we awoke to a magnificent day, really too good to be sitting in front of a radio all day but sit we did, and it was not long before Wayne and Anne were into some more good contacts on 40 and 20 metres.

The Museum was open between 10:00 AM and 4:00 PM each day, and at closing time rostered club members then operated the call sign from their home QTH.

Many thanks to the 'out of hours' operators - Wayne (who has made the Duracell rabbit look sick), Anne, Winston VK7EM, Scott VK7FTTT, Laurie VK7ZE, who put 160m on air, and also all those who were involved with the event and turned up at the museum but did not go 'on air', including Brian VK7KBE, David VK7EX, Keith VK7KW and Dick VK7FORF. We had a wonderful, fun time and enjoyed some good fellowship.

The Devonport Maritime Museum is well worth the look through. Entry is $5 per adult and $10 a family. It has an extensive array of maritime exhibits, including some old ship radios, direction finding, and echo location equipment on display.

I have taken a few photos of these and if any readers have an interest and knowledge in the historic marine radio equipment area, the curator Dave Melhuish, would welcome any information on this equipment and their respective manufacturers. He can be contacted at the museum on (03) 6424 7100.

A panoramic view of the Maritime Museum.

Event Summary

The summary of the contacts reveals the following: A total of 729 contacts, VK1 21, VK2 138, VK3 214, VK4 86, VK5 93, VK6 20, VK7 82, VK8 2, ZL 36, 37 DX contacts (and if you add ZLs, 73 DX contacts)with 22 DXCC countries. Bands used: 160 m through to 20 m plus 2 m and 70 cm.

Here are Anne VK9BYL's comments on the event:

"What an explosive way to re-enter HF operation after so many years of inactivity! But what fun albeit exhausting. Wayne and I took turns at operating and he logged for me when I was operating. By the third day my voice was flagging but I had at last mastered the art of logging the contact whilst talking.

Wayne at that stage was getting his second breath and I really believe he would have gone on for the whole week. We had to physically dismantle the Squid pole and drag him out screaming to get him off air!

Surrounded by the rich treasures of the Maritime history of the north coast and the friendly staff I couldn't help but get back a lot of the old 'bug' and intend to be much more active in future. 73s Anne VK7BYL."

And a report from Winston VK7EM: "I thought the VK100WIA event was great for the coast. I felt honoured to take part from home. My modest tally was 51 contacts, operating 40 and 80 metres, early mornings and late afternoons".

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Ed note: David Cleland VK7DC is the secretary of the Cradle Coast Amateur Radio Club Inc.

The Squid Pole antenna.

Help wanted

The Maritime Museum has quite a collecion of maritime related radio equipment.

While they have the gear, they are a bit short on identification and background stories. Does any of the gear shown in these two photographs strike a chord in your memory?

If so contact the curator Dave Melhuish. He would welcome any information on this equipment and its respective manufacturers. He can be contacted at the museum on (03) 6424 7100.

VK3news

Geelong Amateur Radio Club – The GARC

Tony Collis VK3JGC

Lighthouse Weekend 2010

Gary VK3FWGR arrived followed by Ken VK3NW and they went about assembling the station for 40 m, and erecting Ken's Inverted Vee.

Andre VK3FASW and Gerhard VK3HQ operating the ILLW station.

Peter VK3ZAV operated the GARC 2m IRLP facility, via the VK3RGC repeater, and assisted some of the members of the F Call class with making contacts. Ken VK3DQW arrived in the afternoon and went about erecting his specialist antenna for 160 m and started making contacts.

The bands that were operated on were 160 m, 80 m, 40 m, 20 m and 2 m using Icom IC-7000 and IC-7600 transceivers, supplied by Gerhard VK3HQ. All up the team achieved 205 contacts over a day and a half, of which 120 alone were on the 40 m band and a total of 50 contacts were made to participating lighthouses.

The operation carried on until midnight before the operators called it a day, restarting at 0800 next morning.

A great weekend was had by all, with a few members of the public showing interest in the proceedings and a lot of GARC members came to provide support, whilst others just came for a social visit and the food that was laid on!

And Now for Something Completely Different

Just to show that GARC club members do engage in other group activities, other than radio, is shown by Ian VK3HAJ, Jenni VK3FJEN, and son Michael VK3FMIC at a shooting contest where Michael won the under 18 contest and Jenni the best dressed award.

This was a target shooting competition held over two days by The Little River Raiders — The Battle at Walker Creek. As with radio, the participants are registered with an alias (call sign). Ian was Grizzly Grumps, Michael was Bad Boy Blasco and Jenni was Silver Lady.

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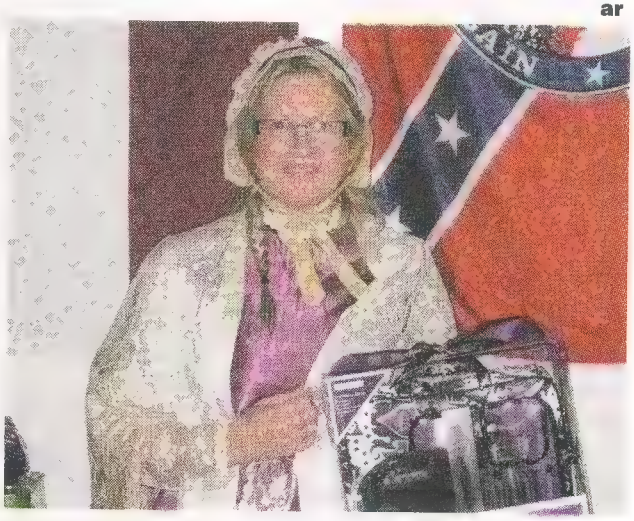


Jenni VK3FJEN at the Black Powder Shoot.

VK3ADL SK

David Lording VK3ADL

David Lording VK3ADL of Cowes, Philip Island, passed away suddenly in his sleep on 13 September.

I had known David for a mere nine years and we became good friends through this hobby. I am sure others have known him for considerably longer and could probably fill in much more detail. I first made contact with David in November 2001 when he had the callsign VK3MED. David was a constant wealth of information for me since I was then new to the hobby. He moved from being a CBer to Novice and on to Advanced. David, myself and many others had lots of QSOs on 2 metres via VK3REC, 70 cm via VK3RHF and of course HF. I shall very much miss our morning drive time QSOs on RHF and coffees in Cowes.

David is survived by his parents, sister and his daughter. He is now with his brother, who lost his life in a motorcycle accident several years ago. A number of our amateur fraternity have expressed their memory of David as "a good operator and a gentleman".

Vale David.

Submitted by Ron Cook VK3JRC

VK2news

Tim Mills VK2ZTM

vk2ztm@wia.org.au

Amateur Radio New South Wales has the final Trash and Treasure event for the year at VK2WI Dural on Sunday 28 November. Clubs and the trade have been advised that it may be conducted as a mini field day but details were not available when these notes were compiled in September. On the Saturday there will be the Council meeting and a possible gathering of club representatives. VK2WI News will advise – tune in at 10 am and 7.30 pm Sunday. At all T&T events, exam assessments are available in the morning – booking and details via the office phone 02 9651 1490 or the Secretary's mobile 0400 445 829. The afternoon has the Homebrew Group. There has been a change on the ARNSW committee. Elizabeth (Beth) Langley VK2AO has had an interstate transfer into next year, beyond the committee year. Beth has stood down from the committee and has been replaced by Robert (Bob) Yorston VK2CAN until the next elections.

Work continues in fitting out the Centenary Building at the VK2WI site. Work has concluded in making racking systems for equipment in the VK2AWI station and workshop area. The library is slowly taking shape. There are plans to undertake training sessions, most likely in the New Year.

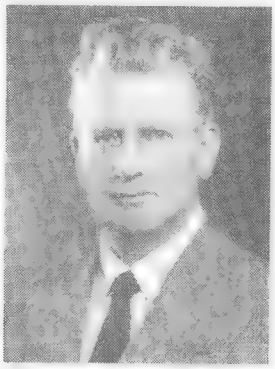
The VK2WI Morse training transmission on 80 metres – 3699 kHz – continues to receive reports from distant locations. John VK2ASU, with a simple shortwave receiver and its whip antenna, on a recent cruise trip was copying it well in the Central Pacific. DX style reports are most welcome. There are plans to reactivate the Morse service on the 2 metre frequency of 145.650 MHz as a facility for Sydney reception in the near future. It has been off this allocation for some time while other systems were in operation at the Dural site. The tests on 438.600 MHz with a software defined repeater at VK2RWI have concluded. The former voice repeater on this channel has not yet been restored.

A message of thanks has been received from Ian VK2ZIO of the **Kurrajong Radio Museum** for the donations of some old Australian callbooks. He is still looking for 1955 and 1956 and 1963 into the 1970s. The first WIA produced callbook was apparently 1954. From various sources there has been coverage every few years from the first known list in 1912 through to 1954 which Ian has been able to acquire. You can email Ian at vk2zio@yahoo.com.au

An interesting thing occurred on a recent charity bush walk in the Blue Mountains, west of Sydney, reported Peter VK2EMU. The Saturday night camp site was in zero mobile phone coverage. A lot of walkers did not know what to do when their phones stopped working. There were many fascinated that Peter could throw a piece of wire up into a tree, connect it to a radio and talk to the YL in Sydney. All without using a satellite or mobile phone network.

On the first weekend of November, Tim VK2ZTM will be giving the talk on the early days of the NSW Division. On Saturday afternoon it will be to the Oxley Region ARC in Port Macquarie. On Sunday will be given to the Port Stephens group.

In the search for the background of Wally Hannam, the first Secretary of the Wireless Institute of NSW, which has become today's WIA, is also revealing a wealth of other information and amusing trivia. The Sydney Morning Herald archives are a most interesting source. On Saturday 18 December 1954 Column 8 – when it was signed off by 'Granny' said ... "The Power of the Press. The Wireless Institute of Australia, announcing its Christmas party, warns: "As the Press may be present, those attending are kindly asked to wear collar and tie."..... Mr. John Logie Baird opened the 14th annual Convention of the Wireless Institute of Australia in 1938 as part of the 150th Anniversary celebrations of Australia. The proceedings were transmitted by VK2HF of Manly simultaneously on the 20 and 40 metre bands for amateur reception all over the world" ... the report concluded.



John Logie Baird.

In 1929, the annual meeting of the NSW Division was held in August and was able to report the successful completion of the negotiations that had been undertaken with a view to the fusion of the New South Wales Division of the Wireless Institute of Australia and the Australian Radio Transmitters League. Under the new arrangement the combined bodies will be known as the Wireless Institute of Australia New South Wales Division and the members of both will automatically share in all rights and privileges of the new body. They also reported on the classes that were conducted during the year. There was a ballot for the seven council positions. The evening concluded with a lecture from Ross A Hull 'On Radio Experiences in the U.S.A.' ... In October 1930 the NSW Division held their first annual ball. ... In August 1922 the "Cheero Girls" Wireless Concert was to be held to aid the funds for the apparatus and club rooms of the Wireless Institute of Australia [Sydney]. ... In June 1923 the NSW Division entertained Mr. E. T. Fisk, the managing director of AWA to lunch at the [old] Wentworth Hotel. He spoke about broadcasting in England and its start up difficulties. He said similar problems would be faced in Australia.

Ross A Hull.

It is good that some historical facts have been recorded. Has your club or interest group either commenced or

been recording its history? Even in this modern age what ever you do – commit it to print – that 'server' you may store it on could vanish one day.

Last month **St. George ARS,** in their VK100WIA slot, set up in a Scout hall in Sutherland and operated an amateur radio expo from 10 am to 10 pm across the three days. It was also the alternative venue for their monthly meeting on the Wednesday evening. The **Chifley ARC** and **Westlakes ARC** also operated VK100WIA last month.

The **Oxley Region ARC** will have their informal, monthly Friday evening get together on the third Friday of the month. This is to give a better spacing from the monthly general meeting on the first Saturday afternoon. If you are a visitor to the Port Macquarie region the club meets at the SES in Central Road. Call on the VK2RPM 6700 repeater or check in on the weekly nets 0830 Sunday or 1930 Wednesday.

A recent working bee at their other repeater site to the north of Port Macquarie had an antenna change that restored the VK2RCN 7000 system back to full voice. As part of club activities there is a working bee every Wednesday morning on various club projects. Check out www.orarc.org

The **Illawarra ARS** elected their 2010-2011 committee at the August meeting. The President is Tony Stone VK2TS; V President Rob McKnight VK2MT; Secretary Ross Masterson VK2VVV and Treasurer John Lawer VK2KEJ. The committee members are Peter Reid VK2NRL; John Bernnett VK2AAL; Les David VK2EW and Neil Justusson VK2VNJ. The monthly meeting is the second Tuesday evening at Industry World, Springhill Rd, Coniston. They have an offer to new members - zero dollars - for the first year. Check out the web site www.iars.org.au

The Sydney based Television Gladesville VK2TVG last June suffered the total loss of their studio facilities along with the video library in a fire. The VK2TVG operation was a function of the **Gladesville ARC** and has been continuous for the past quarter century. With so much changing in television these days, the future of VK2TVG and its future operation has not yet been determined.

Orange and District ARC

Members of the ORARC have been delivering some electronic training to students at the Glenroi Heights Public School. The students in years five and six receive a weekly visit where aspects of simple electronics are demonstrated and practical constructed carried out.

Morse code has also been taught to students by Ross VK2ER, who also provides the VK2BWI session on 3550 kHz on Thursday evenings.

The article below apeared on 4 July 2010 in the *Central Western Daily*

Until next month 73 – Tim VK2ZTM. **ar**

Students wired for sound

BY EMILY BROTHERTON Central Western Daily 04 July, 2010

Children at Glenroi Heights Public School have recently adopted a new form of messaging following visits by members of The Orange and District Amateur Radio Club.

Teacher Rachael Livingstone's year five and six class have been learning basic morse code this term, using boards they have built during class.

Amateur radio club member Lez Morrison has been conducting weekly classes on electronics and soldering.

"The kids started out making small projects, and have recently completed assembling a radio transmitter.

"They have learnt to solder circuits and next they will solder components onto it to make a flashing LED."

"Hopefully by Christmas they will have made a complete circuit."

Fellow club member Ross Wilson has been teaching the morse communication component of the classes, and said the students are showing a lot of progress.

The students now have the ability to not only communicate in morse code to one another, but also to people from around the world.

Twelve-year-old Blayde Wilson said he looks forward to the classes because he gets to learn about something different.

"I like making the equipment. I am also getting really good at the morse code."

Mrs Livingstone said the students have had a keen interest in learning the new skills and is impressed that all of them want to get involved.

"There are some girls in the class who have never done anything like this ... it's good to see them really enjoying the electronic work."

Mr Morrison, or VK2SON as he is referred to in the Orange and District Amateur Radio Club, encourages people to become a member.

An information day to promote the club was held yesterday at the cadet centre in Warrendine Street, with a free barbecue supplied.

Tapping into Morse code. Ross VK2ER teaching student Morse at Glenroi Heights Public School. Photo credit: Central Western Daily – Orange NSW.

ALARA

Margaret Blight VK3FMAB

About ALARA

ALARA was formed in 1975 by a small group of Australian ladies interested in amateur radio. Membership has now grown, with many Australian members sponsoring overseas YLs into ALARA on a reciprocal basis. The term "YL" stands for "young lady", regardless of age.

ALARA's weekly net can be found each Monday evening on 3.570 MHz (approx) at 1030 UTC (or 1000 UTC during daylight saving time). All YLs, members or not, are welcome to call in. If you are not yet licensed, you can still join in if a licensed person is there to supervise the transmissions.

YL nets can be found on HF and some repeaters. Ask your State Representative for a list of nets she knows of. EchoLink is also becoming popular and amateurs living in units can still keep in touch via their computers even if antennas are not allowed.

A newsletter is published quarterly. It contains official ALARA information as well as news of members activities, photos etc. This newsletter is available by post or email.

Each Australian State has a member who acts as the local representative for ALARA and is willing to help you with any queries.

ALARA's Internet web page address is :
http://www.alara.org.au

The above information may be of use to newcomers to the hobby of radio. It can also be used as the basis for information which members can provide to the general public when they have the opportunity to use hand out leaflets. Much of the information is also available on the Application Forms for ALARA membership which also need to be available if setting up an information table at Club events, Meets, etc.

I recently spent an enjoyable evening meeting up with a couple of old friends whom we had not seen for a number of years. The wife was astonished to learn that women radio operators were currently active in their hobby and wondered why she had not heard about them before. This may very well be a normal reaction from the general public, so it is up to us all to inform and educate about amateur radio.

There may be better definitions but the following are from the internet:

Amateur radio, often called *ham radio*, is both a hobby and a service in which participants, called "hams", use various types of radio communications equipment to communicate with other radio amateurs for public services, recreation and self-training. Amateur radio operation is licensed by an appropriate government entity as coordinated through the International Telecommunication Union.

An amateur radio operator is an individual who typically uses equipment at an amateur radio station to engage in

ALARA and its connections get the Trifecta on the VK100WIA Award

A number of operators have been working towards gaining sufficient points to receive the **WIA VK100 Century Award Certificate.** Of the first three Certificates awarded, those numbered two and three were to ALARA members. Heidi VK3 HID and Jean VK3VIP. Certificate Number One. went to John VK3DQ who just happens to be the OM of Jean VK3VIP. I am assured that this was an entirely random choice.

Jean VK3VIP has the Number Three WIA Centenary Award.

Heidi VK3FHID with her Number Two certificate.

John VK3DQ receives the Number One certificate for the WIA Centenary from WIA President Michael VK3KI.

two-way personal communications with other similar individuals on radio frequencies assigned to the amateur radio service. An estimated two million people throughout the world are regularly involved with amateur radio (Wikipedia).

Sponsorship

ALARA has a sponsorship scheme in place which enables ALARA members to sponsor overseas friends.

Many friendships are made this way and when radio conditions are good you may get to speak to your sponsor on air. In fact a number of sponsorships are decided after meeting on air.

If you speak or have learnt another language, this is a great way to keep in practice. If you travel overseas, some sponsors can meet you and show you the sights, others may be able to offer accommodation. If/when your sponsor comes to Australia you may be able to do the same.

Some of the countries involved in this scheme are: Great Britain, America, New Zealand, Japan, Germany, Greece, Italy, Sweden, South Africa, India and France.

The ALARA member pays the subscription for a female radio amateur in another country to belong to ALARA and she in turn pays a subscription to the women's radio club in her country. This method saves a lot of money exchange hassles. They receive our newsletter and you receive a copy of their newsletter.

Many of the DX members being sponsored receive their newsletter by email as it arrives "hot off the press" and they can read it the same time as their sponsor.

Some ALARA members have one sponsor and some have several. Many keep in touch regularly while others may only keep in touch on occasions such as Christmas and Birthdays. Our newsletter often has stories of DX YLs attending ALARA luncheons and visiting sponsors. We presently have approximately 110 happy DX members of ALARA.

If you are interested in sponsoring a DX YL or being sponsored into an overseas club, contact the Sponsorship Secretary Maria VK5BMT for more information.

Comments from sponsors:

Robyn VK3WX is one YL who is thrilled with the contact she has with her sponsors. "Alma ZL1WA speaks to me regularly and it is great that we have visited each other on numerous occasions. She can visualise our garden and house, and I know exactly how high her camellia hedge becomes in the growing season. I am also in email contact with my US YL sponsor, Barb KA3VXR; we have been friends for many years.

She has a large extended family and every year she sends me a family calendar. She also composes a yearly letter with all their happenings which is a lovely way to keep me in touch with her world. I really value the radio friendship I have with my sponsors and I encourage other YLs to become involved in the sponsorship scheme".

Dot VK2DB met with three of her sponsors, Christa DJ1TE, Nina DL2GRC and Sarla VU2SWS, at the Munich International YL Meet in June this year.

"I have met them all on air but we also keep in contact by email and snail mail too. Last year, when OM John VK2ZOI and I accompanied son Ben VK2FBRB overseas, Nina and Christa gave us accommodation and took us sight-seeing for a week.

ZL1NYL and her sponsor, JeanVK3VIP.

The OMs' table at the VK3 luncheon.

Laurie ZL1ICU greets Miss ALARA.

I have also met my ZL sponsor Ngaire ZL2UJT when she attended an ALARAmeet.

I have yet to meet my American and Japanese sponsors – one day! All my sponsors have interesting 'other' hobbies and a great sense of humour. Sponsorship has opened the world to me; just like getting my radio licence did 30 years ago."

More recently Jean VK3VIP met up with her New Zealand sponsor Marlene ZL1NYL when she and her husband Laurie ZL1ICU visited. They had come to Melbourne specifically to meet up with Jean and her husband and stayed with them for a few days. The other purpose for the visit was to attend the ALARA birthday celebrations. So Marlene and Laurie were able to meet and greet a number of other members at the ALARA birthday luncheon.

VK3 luncheon

On Saturday 25 September, ALARA members from a number of clubs met together to have an enjoyable lunch.

There were members from the Eastern & Metropolitan District Radio Club, Macedon Ranges Amateur Radio Club, Gippsland Gate Radio & Electronics Club, Midland Radio Club and even a representative from the WIA office. All were very welcome. These lunches provide a great opportunity to catch up with members and exchange news. They also provide a friendly environment for new members in an informal setting.

The Amateur Radio Victoria website Reference section

The Repeater Directory, Australian Beacons Listing, Packet Radio Directory and VHF Records have just been updated with the latest information. You need to log into the web site with your user-name / password to view the files at http://www.amateurradio.com.au/reference

The Annual Whitehorse Spring Festival was set to be held on Sunday 24 October, 2010. The EMDRC is organizing to set up an active display of their equipment. This provides an opportunity to involve the public in the activities of the club as the Festival usually draws a large crowd.

A VK100WIA station was activated over a three day period in the clubrooms at Burwood. Club members rotated over this period with some repeating their shifts. Altogether they managed to log onto 1130 calls.

This was a good result and it has been interesting to note the level of interest generated, both within the club and the amateur community in general.

There was also considerable interest in amateur television, mostly from VK3 but many VK and DX stations who worked the station and were able to view the contact 30-60 seconds later.

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At the ALARA luncheon were: Rear: Susan VK3UMM, Barbara VK3 AGO, Jean VK3VIP, Pat VK3OZ, Dianne VK3FDIZ, Jenny VK5ANW/3, Front Row: Unnamd Visitor, Margaret VK3FMAB, Pam VK3NK, her grandson Reuben, Tegan G and Margaret L.

Jean VK3VIP and Margaret VK3FMAB visit EMDRC VK100WIA station

DXnews & views

John Bazley VK4OQ
E-Mail: john.bazley@bigpond.com

ARRL Awards Committee Statement on Dissolution of the Netherlands Antilles

September 23, 2010

To clarify the administrative process by which the anticipated changes to the two existing Netherlands Antilles DXCC entities will be made, the ARRL Awards Committee has determined that at

0400 Z (12:00 am local time in the islands), 10 October 2010,

the two Netherlands Antilles DXCC entities will be deleted.

Commencing at

0400 Z (12:00 am local time) 10 October, 2010,

operation from the islands of Curacao, Bonaire, Sint Maarten, Saba, and St Eustatius will count for a yet-to-be determined number of new entities under the DXCC List Criteria, and Political Entities, Rule 1 and/or Rule 2 Geographic Separation Entities. When the Awards Committee determines what Rule 1 or Rule 2 actions apply, it will announce the final disposition of the entities on the DXCC list. The DXCC desk will not accept confirmations for these new entities until after 1st January 2011.

Bill Moore NC1L, Awards Branch Manager

As will often occur when a new country may be recognised, some keen DXers make plans to activate the "new one". On this occasion, with the possibility of FOUR new countries being activated at the same time, the teams have agreed a band plan to allocate sections of the HF Bands to each group.

The frequencies can be found at either of the URL's below:

PJ7E: http://www.stmaarten2010.com/

PJ6A: http://www.saba2010.com/

Moving on to DX activity and planned operations:

We have details of two operations from **ZD9** (# 36 on the 2009 Wanted Countries list!).

The shorter stay is Dieter DJ2EH, who will be visiting **ZD9, Tristan da Cunha Island.** He will operate between 20 November and 8 December, if the vessel is on time. He will get his callsign once he arrives on the island. Dieter leaves Germany on a British Airways flight on November 10, and then departs Cape Town, South Africa, November 13 for the six to seven-day voyage to Tristan. If the weather is not too bad, he says, he will put up a 22.3 m (73-foot) tall vertical that will cover 160, 80, 40 and 30 m, and a three-element wire beam. His rig will be a K3 to an 800-watt amplifier. Dieter plans to operate on CW, SSB and RTTY. It will be a solo operation.

The second operation is by John ZS1LF (ZR1JON), who landed on **Gough Island** on September 16, along with a host of scientists. John and his team of eight will remain, while the others depart in about two weeks. He hopes to begin his ZD9GI activity on the air in about four weeks. John and QSL manager ZS1A, Johan, ran some tests with good signals on 40 and 20 metres. John is expected to be on Gough Island for a one-year work assignment as the team leader and radio technician. He is brand new to HF and has no experience on HF with plans to be QRV in his spare time. His station consists of a TS-480, an amplifier and dipoles.

Chris VK3FY is certainly hitting the headlines with 100 days to go before DX0DX hits the ham bands and there is mounting interest in making contact with the DX Special Entity, **The Spratly Islands**, over a three-week period from January 6 to 24, 2011.

DXpedition Team Leader, Chris Dimitrijevic VK3FY (DU8/VK3FY) said "With equipment starting to arrive in the Philippines including the Titanex V160E Vertical the excitement is mounting. Currently 31 operators are confirmed while a number of positions are still available should any DX operator wish to join the team".

Heard Island 2013. Again Chris Dimitrijevic VK3FY and Steve Chamberlain VK6IR (Co-Leader) are in the "preliminary, but serious" planning stages to put Heard Island back on air in February 2013. It is proposed to have a 13-member DXpedition team on the island for two weeks. Costs are expected to be in the order of $USD 500,000. Once the key preliminary steps (i.e. to get a permit to land and to charter a suitable ship) are completed, or satisfactorily progressed, they will apply for "at least one callsign" and an Internet website will be set up to keep everyone informed. This announcement highlights the amount of detailed planning necessary to activate some of these 'harsher' DX entities.

Four Japanese amateur radio operators will be operating from **Mahe Island (AF-024), Seychelles** in November. Tug JA2ZS states that activity is planed for 1.8 through 50 MHz on CW, SSB, RTTY and PSK from November 19 to 27. Listen for Noboru S79AU (JA2AAU); Iwao S79SS (JA2LSS); Seiji S79TE (JA2ATE); and Tug S79ZS (JA2ZS). QSL via their home calls either direct or via the bureau. As a side note S79AU and S79ZS are re-issued callsign.

The OM0C Contest Crew has adjusted the operating dates for an upcoming **Gambia** operation. They now plan to be active November 17 to 30 with renewed callsigns from previous expeditions, C50C and C52C, used last from The Gambia in 2007. Special callsign C5A will be reserved for the CQWW CW Contest. Operators are OK8WW/OM2TW, OM5AW, OM6NM, OM2RA, OK1RI, OK1DIX, OK1NY, OK1DO and OK1FFU. The group will be equipped with gear from Elecraft and Kenwood with six full time stations during the CQWW, four stations other times. Amps will be the OM3500A, OM3500HF and OM2500HF. Antennas will be verticals, delta loops, four squares, Spiderbeams and Yagi stacks.

HK3JCL will be the Colombian call used by Lothar DK8LRF, starting in early October through November. He will be using a TS-50 into a rhombic antenna from the **Restrepo/ Meta area (FJ34fg)**. No details of the orientation of the

rhombic! QSL via DK8LRF either via the bureau or direct.

Tony KM0O (XU7MWA, HS0ZJN) will be QRV as 9M6/KM0O at Kinarut, **Sabah, East Malaysia** from November 24 to 30, including the CQ World Wide CW DX Contest. "I will have the most work to do on antennas for 80 and 160, so I will be emphasizing those bands before and after the contest" he says. QSL information will be posted on QRZ.Com.

A further reminder that a multi-national team has plans to go to **Niue Island (ZK2)** and then **Norfolk Island (VK9N)** during late November and early December. First it will be ZK2AA from November 20 to December 3. VK9N from December 5 to 12. QSL via PA3LEO.

Craig MM0SSG has been active as D2SG from **Luanda, Angola** since 1 September, and will remain there for the next six months. He will be QRV on 80-10 metres CW, SSB and PSK31; "power will either be 100 or 10 watts depending on circumstances, with a small vertical antenna for most bands and a 20 m dipole". QSL via home call, direct only (correct address to be published on qrz.com).

Janusz SP6IXF and Wlodek SP6EQZ will be active as PJ5/SP6IXF and PJ5/SP6EQZ from **St. Eustatius (NA-145)** from November 18 to December 3. They will operate CW, SSB and RTTY on 160-10 metres. QSL via home calls. A dedicated website is under construction.

Takuto Yoshida JE1SCJ will operate as V63YT from **Pohnpei (OC-010)**, Micronesia on November 24 to 28, including activity during the CQ WW DX CW Contest (but he will have to QRT around 0900 UTC on Sunday because of his flight schedule). He plans to be QRV on 160-6 m mostly CW, with some SSB, RTTY and PSK31, using 100 watts, wire antennas and a Yagi for 6 m.

Outside the contest he will focus on 160, 30, 17 and 12 metres. Suggested frequencies are 1824 (QSX up/ down), 3510 (QSX up), 7010, 10110, 14010, 18080, 21010, 24900, 28010 and 50090 kHz. QSL via JE1SCJ, direct or bureau.

Christian TL0A is back in the **Central African Republic (CAR)**. Currently he is in Bangui but plans to relocate to Bakouma at the end of October. He expects to remain there until the end of 2011. In 2012 he could continue in Bakouma or possibly return to **Niger (5U7U)**, depending on his job situation. Christian is QRV mostly on SSB and RTTY and often has his beam on the long path looking for Oceania, but will do CW upon request. QSL card requests go to his Callbook address in France. He is very good about answering all requests; it just takes a while as he picks up his mail when he goes home to France.

Good luck in the pile-ups until next month.

Special thanks to the authors of The Daily DX (W3UR), 425 DX News (I1JQJ) and QRZ.DX for information appearing in this month's DX News & Views. For interested readers you can obtain from W3UR a free two-week trial of The Daily DX from www.dailydx.com/trial.htm

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OTY

We were there too — early YIs

Dear Sir,

I have only recently refound your magazine (after a break of more than 40 years). Of course it isn't the same magazine in format that I knew but the content and ambience were familiar. Thank you for bringing back so many memories. They hadn't been forgotten, just pushed to the back of my mind from the weight of more current-day interests and concerns.

My Dad was the 'ham' but with us it was really a family concern, and in fact several fellow hams were better known to me than my larger family. His name was Ted Whiting and his call sign was VK2ACD. He retained his licence until his death in 1985, but our connection with ham radio continued with regular contact with Sid Molen VK2SG, until in turn he died.

Your magazine made me recall the ham language, something I hadn't thought about for years and that was a joy. That led me to remembering people's names stories and events I had absorbed into my psyche. The WIA was a big part of my father's life for many years and I vividly recall listening to the Sunday WIA broadcast each week.

I must admit, for me SSB was a failure and that was about the time ham radio and I took different forks in the road. I just couldn't seem to 'hear' it properly. My ambition for a long time had been to earn my own licence, but another hearing problem was my inability to differentiate between the dots and dashes of morse. And of course, at that time Morse code was a compulsory part of the licence.

Then life took over, and with marriage and children a responsibility added to our nomadic way of life there was no way I could justify the expense of equipment from my household budget. So the dream faded.

I found the July 2010 issue of *Amateur Radio*, and I apologise for my tardiness in writing to you with my thanks, but I did enjoy the article about YLs of earlier days. The only YL licence holder I can now recall was Muriel Eagles, who took over her late husband's call sign in the 1950's. She was a close family friend, as had been her husband (from memory his name was Jim).

This brings me to the only criticism I have of the issue. When talking about the YLs reference was made frequently to the WRAAF. May I point out that given the dates none of these YLs could have been members of the WRAAF which was only formed in 1951 – as a former serving member of the WRAAF I know my service history. They would all have been members of its predecessor the Women's Auxiliary Australian Air Force – WAAAF (or as we still affectionately call these marvellous ladies, the 'triples A's). They were the trail blazers in our eyes.

Again thanks for resurfacing my store of memories. They are still coming back into my mind and I am investigating them more closely again.

Yours sincerely,

Brenda Douglas **ar**

Contests

Craig Edwards VK8PDX
vk8pdx@yahoo.com.au

CONTEST CALENDAR

November	6-7	Ukrainian DX Contest	CW & SSB
	13-14	WAE DX Contest	RTTY
	13-14	Japan International DX Contest	SSB
	20-21	**Spring VHF/UHF Field Day**	**CW & Phone**
	27-28	CQWW DX Contest	CW
December	5	Kiwi Digital Modes Group Twin Sprint Digital Contest	PSK31 & RTTY

As I write this I am in complete zombie mode after a busy 48 hours of CQ World Wide RTTY contesting. Fortunately I was rostered a day off for the Monday, so that I can recover and normalise for work on Tuesday.

It is a big time of the year in sport with football grand finals and the V8s at Bathurst; so too is it in the range of big contests that have recently occurred. In November the hits just keep on coming until things slow down in December. The big one obviously is CQWW CW.

2010 CQ World Wide CW Contest Rules

Date:

November 27–28

Time:

0000 GMT Saturday to 2400 GMT Sunday

I. Objective:

For amateurs around the world to contact other amateurs in as many zones and countries as possible.

II. Bands:

All bands, 1.8 through 28 MHz, except for WARC bands.

III. Type of competition

Choose only one of several available.

Due to space considerations this month we are unable to publish the complete rules for this contest. The rules can be found at

http://www.cqww.com/CQWW-Rules-2010.pdf

The results for the

30th ALARA Contest

(Held 28/29 August, 2010)

are on page 43

Japan International SSB DX Contest Rules

Date:

November 13–14

Time:

0700 GMT Saturday to 1300 GMT Sunday

Bands:

3.5, 7, 14, 21, 28 MHz

Objective:

For amateurs around the world to contact JA stations in as many JA prefectures + JD1 islands as possible.

Due to space considerations this month we are unable to publish the complete rules for this contest. The rules can be found at

http://jidx.org/jidxrule-e.html

Spring UHF/VHF Field Day Rules

Dates:

Saturday and Sunday 20 and 21 November 2010

Duration:

Varies due to time zones.

The rules can be found on page 44 of the October issue of *Amateur Radio* and online at

http://www.wia.org.au/members/contests/vhfuhf

Worked All Europe RTTY Rules

Date:

November 13–14

Time:

0000 GMT Saturday to 2400 GMT Sunday

Bands:

3.5, 7, 14, 21, 28 MHz

Limits

There are no continental limits; everybody can work everybody.

Due to space considerations this month we are unable to publish the complete rules for this contest. The rules can be found at

www.darc.de/referate/dx/contest/waedc/en/r

WIA Callbook 2011

Now available

See our online bookshop for details

www.wia.org.au/bookshop

VK7news

Congratulations

Congratulations to Martin VK7GN for being the 15,000th contact with VK100WIA and also congratulations to Vince VK7VH who scored 484 points and won the QRP May Marathon contest in the phone section. At the time of writing this column there were 13 VK7s who have claimed their prestigious WIA Centenary Award certificate. According to the online log there are many others who could claim the certificate. You have until 30 January 2011.

Northern Tasmania Amateur Radio Club

The September NTARC meeting saw Jason VK7ZJA talking about radar and stealth technology. Jason brought along a small Doppler radar to demonstrate and spoke briefly about Gunnplexer modules and how easy it could be to create a 10 or 24 GHz full duplex FM microwave link.

Some experimentation on the power supplies with the Wouxon KG-UVD1P radio and the equivalent Quansheng radio has resulted in some warnings from Bill VK7MX. Bill has suffered two failures in his Wouxon SMPSU/charger and suggests that you do not leave them on any longer then over night when charging batteries. A simple replacement solution was found with the SMPSU being replaced with a linear plug pack of equivalent rating.

Any NTARC member looking for a 2011 call book, please let NTARC Treasurer, Ann VK7FYBG know ASAP.

Cradle Coast Amateur Radio Club

CCARC welcomes new Foundation Licensee Adam Brown VK7FAWB and we look forward to hearing Adam on the air in the near future.

Please note that due to interference problems on the Table Cape repeater VK7RAC (438.650 MHz), a CTCSS tone of 141.3 Hz is now required to access the repeater.

North West Tasmanian Amateur TeleVision Group

Big thank you to Graeme VK7AQ who has donated a quantity of RT85s and PRM8030 to NWTATVG and these are available to club members for a donation. Tony VK7AX has been actively increasing the use of the club's repeater VK7RTV through regular programs and linking them to the ALKASKA Conference Server, IRLP Nodes 6239 (VK7DY) and 6215 (VK4RSS). There are also daily amateur radio broadcasts via EchoLink VK7AX-L News Link Node at 8.00 pm daily with a repeat at 9.00 am the following morning. For more information take a look at: http://www.vk7ax.id.au/atvgroup/

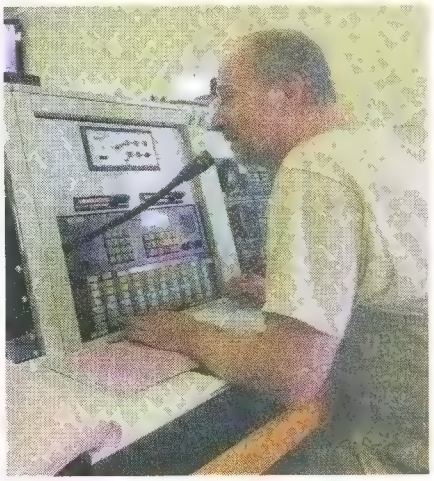
WICEN Tasmania (South) Inc.

A recent WICEN event supporting an Equine Endurance Event demonstrated some of the risks associated with these events. Spooked horses in the middle of the night running through the campsite saw a near miss with a horse demolishing a WICEN member's tent (empty at the time!) and getting itself attached to a fence. Quick action by WICEN member Roger VK7ARN released the horse which was found later that night many kilometres away. WICEN Tasmania (South) will be conducting a risk minimisation study to safeguard members from any future horse stampedes!

Radio and Electronics Association of Southern Tasmania

REAST's September presentation was given by Warren VK7FEET who recently spent time on Macquarie Island as part of the Antarctic Division support of the Pest Eradication Program. Warren took the attendees through the whole trip from the French Antarctic Research Vessel – *L'Astrolabe's* voyage down to "Macca" where the radio operations support was mainly marine VHF with repeaters along the 30 km long island and HF where required. Warren was on the island for two weeks and then came back on the Australian Antarctic Division ship – the Aurora Australis. A fascinating presentation, thanks Warren.

Our ATV Experimenter's nights continue to be popular and we have now gone to Digital ATV on 446.5 MHz DVB-T. Recently we have featured our popular "Show and Tell" sessions along with videos of the WIA Centenary Weekend, tour of the ABC studios in Hobart, the South Hobart Primary School contact with the ISS, 80 m Voice Powered CW Transmitter, and some interesting space shuttle and ISS videos. Now we are on daylight saving time, why not come up and see what the ATV Experimenter's get up to on a Wednesday night starts around 7:30 pm. See you there! **ar**



Warren VK7FEET in the Radio Room at Macquarie Island (Photo: VK7FEET).

The Macquarie Island Base from Wireless Hill (Photo: VK7FEET).

VK6news

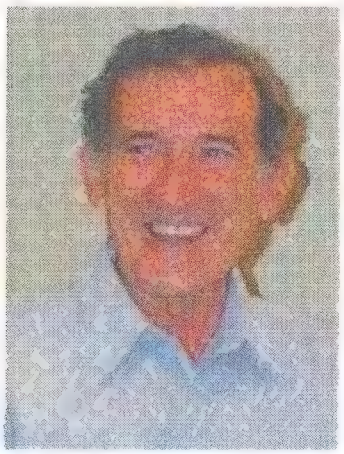
Keith Bainbridge VK6RK

Sad day in WA and WIA – VK6NE – SK

Welcome to the column for this month. It has been a sad time over the past week as I write this with the addition of another Silent Key to the list of VK6 amateurs no longer with us. I am sure most of you will be aware by now of the passing of one of WA's senior and most respected amateurs.

On Tuesday, 28 September, at 6 am, Neil Penfold VK6NE lost his long battle with cancer. I was asked to write a *'Radio Eulogy'* for Neil who has been a friend for over 20 years as well as a companion at the NCRG. Here is the Eulogy as I read it at Neil's funeral.

Neil Penfold VK6 November Echo. SK



I am at a bit of a loss where to start this tribute to a dear friend and one of amateur radio's true personalities.

I suppose some background to his amateur radio career would be a good place to begin. First licensed in 1962, Neil soon found an interest in the administration of the hobby of amateur radio. From 1965 onward he had spells as VK6 Divisional Secretary, Councillor, Vice President, President and Federal Councillor, before moving on to the national positions of Federal Director and Federal President, roles he held for many years. His leadership skills and powers of persuasion are legendary. He was made a Life member of the WIA VK6 division in 1976 and was a winner of the GA Taylor medal.

It was not only the administration side of amateur radio that interested him, he was a dedicated DXer and achieved some of the highest operating awards available in amateur radio. I think it was his interest in DXing that led to his passion for QSL cards and QSLing. I remember accompanying him to the late Jim Rumble VK6RU's house to take over the running of the VK6 QSL bureau, and the assistance, given reluctantly I might add, by my two then young daughters in sorting out the cards for Neil over several months. The QSL bureau gave him the opportunity to study the amount of DX worked by local amateurs and enabled him to encourage others to get on the bands and work more overseas stations. As a result of his QSL activities, he was approached by many amateurs to be their QSL manager, and I believe he was, in fact, manager for over 33 callsigns and of course the VK9/VK0 bureau manager. He was actively involved in assisting two Heard Island DXpeditions and made many friends around the world whilst doing so.

He also managed several contests over the years including the annual Oceania DX contest, which takes place over 24 hours starting this afternoon. The NCRG will participate again from Muresk Agricultural College with the intention to 'win it for Neil'.

When the NCRG was forced out of Carine College and went looking for new premises, Neil suggested we look at Whiteman Park and went off to investigate. He managed to secure a sub-lease and things started to take shape. This became his passion; the 'Manager' was born. Neil took it on himself to lay out the floor plan, co-ordinate the work undertaken and to generally manage the construction project. It allowed him to exercise his formidable leadership skills and gave us a leader with time and vision to push the project forward. We were given regular email updates, affectionately known as Pastoral Letters or Plonky's Ponderings, highlighting the achievements of the past week and urging us on to better things. We also coined a new nickname for him as the project came close to finishing. As Neil took it upon himself to keep the place tidy, he became 'Sadie the cleaning lady'. Woe betide anyone who trampled sand onto his clean floors.

The WIA centenary celebrations were held in March this year and the club decided it would be an appropriate time to have an official opening day for our virtually complete Whiteman Park premises. We also decided that Ham Heaven, whilst accurate, was not really the most appropriate name for it, and the idea for the 'Neil Penfold State Amateur Radio Centre' was born. So on 14 March, 2010, almost 100 years to the day after the Wireless Institute of Australia was founded; we chose to honour Neil and his efforts by naming the club premises after our beloved Plonky!

And it certainly made his day – he said he had never been more proud of any of his other achievements in amateur radio – and even shed a tear or two as he cut the ribbon! We also decided to treat him to a little present, so several members got together and purchased the number plate 'VK6NE' for his car. It must have had an effect because he actually put a two metre radio in there and used it!

Neil took it on himself to organise the mezzanine floor at the club into a Museum of Vintage radios and he spent countless hours almost every day on his own out there building shelves and display units to house this comprehensive collection. It is still a work in progress, but Neil, honestly, we promise it will be finished soon!

Another silent key and an old friend of Neil's was Dave

Couch VK6WT Dave's collection of Morse keys and associated equipment was legendary and Neil suggested to me personally that an effort should be made trace it all and place it on display at the club premises. This has now become a reality and I owe it all to Neil's encouragement.

I did not get to visit Neil in hospital as I was full of the flu and did not want to risk passing it on, but Wayne tells me that he was frustrated being there, stuck in hospital on a Sunday morning and wondering who was cooking the snaggers and were there enough onions! We are going to miss you old fella, the place just won't be the same on a Sunday morning - and I will finish with a comment from a friend of his for many years:

Neil Penfold.... A man of few words, who would always take the time to consider what he had to say then deliver it with a minimum of fuss.

73 old man, now exclusive QSL Manager to Marconi and St Peter, all others via the bureau.

Thanks to all the amateurs who attended the funeral on Saturday 2 October.

ILLW at Guilderton and repeaters at Rolystone

Just in from Heath VK3TWO/VK6TWO. WICEN (VK6) was active during the ILLW weekend setting up a station at the Guilderton Lighthouse about 80 km north of Perth. The station was set up and operated by Heath VK3TWO/VK6TWO, Craig VK6FLAM and Monique VK6FMON. The station consisted of two multiband HF dipoles, a sloper and a 40 m 1/4 wave vertical. Weather was not the best with some rain and plenty of wind which called for some mid-night emergency re-enforcements. The 3 m x 3 m Gazebo and the 4 x 4 camper survived the two nights (just) and around 100 contacts made. Some "time out" was also taken to admire the stars through a rather powerful telescope. Thanks to all who made the contact on a relaxing and enjoyable weekend

Dennis VK6KAD with "Jet" overseeing operations at Roleystone Working Bee.

ILLW operating WICEN VK6WIE callsign from Guilderton Lighthouse, with double rainbow. Operated by Heath VK6TWO, Craig VK6FLAM and Monique VK6FMON

A double rainbow photo of the station can be found at qrz.com/db/vk3two.

WA Repeater Group has had a very successful working bee weekend at its premier HUB repeater site at Roleystone. Over the weekend a total of three new runs of LDF5-50 were run up to the top of the 80 m mast and new antennas installed. Refurbishment of all existing coax and antennas also took place.

Several reports have already indicated a significant improvement in coverage to their area.

The WIA/Icom D-STAR repeaters are currently being relocated and tested in the new location at Roleystone. The relocation of VK6RWN from Walliston to Roleystone should see a huge improvement in the performance and coverage of D-STAR in Perth. VK6RLM will also see a new home in the hills.

There are many more working bees planned in the coming months to overhaul, improve and expand the WARG repeater network. WARG are currently investigating an overhaul/replacement of its entire 20+ repeater network with planned expansions to the north to Geraldton and to the east towards Kalgoorlie. APRS coverage has already started expanding to the east using east/west Yagis at Wondowie.

A new repeater has been accepted by the Kellerberin Shire and equipment is in the final stages of being collected and prepared. Once the new repeater has been fully commissioned and tested, VOIP linking will be trialled to connect it to other repeaters along the route to Kalgoorlie and/or Perth. Many thanks to Peter VK6FUN, Craig VK6FLAM and Heath VK3TWO for their efforts in progressing the new services.

JOTA had been shaping up to be a HUGE affair in Perth and surrounds this year. AR exposure at the Scout area at the Perth Royal show during Super Springtime drummed up a lot of interest and the demand for radio operators was high.

The new WAHAM Google group has also assisted in organising group activations and finding radio operators to support them. Many thanks go to Bob VK6POP for his efforts as the National JOTA/JOTI coordinator; and to the many hams who offered their time and equipment for the global event.

With the Scout communications team and Ham College running several AR licence courses in the next six months, we expect that there will be many Scouts moving up to the world of amateur radio.

VK100WIA Super Springtime in Perth

September 20 to October 2 saw the activation of the VK100WIA for the Super Springtime event in Perth. Super Springtime saw 12 days of the VK100WIA callsign in Perth, shared by WICEN WA, Scout Communications Team, WA Repeater Group, and the WA VHF Group. See the separate cover story on page 48.

I am sure with the upcoming activity for JOTA and the National Field Day, there will be a lot more in next month's column. The NCRG will be busy in the contest season, so watch this space.

ar

The VK6RK shack: Top row L to R: IC-970H, LP-100A, Microham Microkeyer 2R+, IC-910. Bottom row L to R: IC-7700, FTdx9000D, Expert 1K-FA.

Results: 30th ALARA Contest (28/29 August, 2010)

Lesley VK5LOL ALARA Contest Manager

Results

Catherine VK4GH	1498	Top overall, Top Phone, Top VK4 ALARA member
Pam VK4PTO	1145	
Leonie VK2FHRK	1008	Top Foundation Licensee, Top VK2 ALARA member
Gerald VK2HBG	470	Top VK OM, Top VK2 OM
Melissa VK2FMAI	429	
Pat VK3OZ	398	Top VK YL CW (CW score 40), Top VK3 ALARA member
Nora VK5NYD	380	Top VK5 ALARA member
Anne VK7BYL	311	Top VK7 ALARA member
Paul VK5FPAS	272	Top VK5 OM
Mike VK3AVV	249	Top VK3 OM
Linda G0AJJ	232	Top DX YL, Top G, M, 2E YL non-member
Gwen VK3DYL	219	
Tom VK4ATH	205	Top VK4 OM
Derek VK4MIA	177	
Shirley VK5YL	173	
Lesley VK5LOL	144	Check log
Meg VK5YG	143	
Jenny VK5ANW/3	140	
David VK5AYD	113	
David VK5DB	108	
Gerard VK2IO	79	
Elizabeth VK1FELF	58	Top VK non-member
Hans VK5YX	54	
Neil VK4FHYH/8	50	Top VK8 OM
John VK3MGZ	49	
Helen VK2FENG	48	
Dot VK2DB	30	
Cameron VK2CKP	24	
Mavis VK3KS	22	CW only
Celia ZL1ALK	20	Top ZL ALARA member

VHF/UHF Section

Lesley VK5LOL	15	Check log

SUMMARY:

ALARA members: 15 (including 1 DX member)
Non-member YLs: 3
OMs: 12
TOTAL LOGS: 30

Comments on 30th ALARA Contest Results

Thanks to all those who took the time to participate in this year's contest.

I was a bit disappointed in the participation rate by YLs this year and particularly in the VHF/UHF Section. The only person to have a go was me!!

The results were very similar to last year's with Catherine VK4GH being the top overall winner with 1498 points although Pam VK4PTO kept Catherine on her toes!

Leonie VK2FHRK was once again our top Foundation licensee with 1008 points.

Pat VK3OZ took out the CW honours again but it was great that Mavis VK3KS came up. She has been contesting since 1983.

We had three non-members join in, which was great. We hope Elizabeth VK1FELF enjoys her one year subscription to ALARA for being the top VK non-member.

The DX was not good at all this year, although Catherine made many contacts into North America on 14 Mhz. Maybe some of us should upgrade our licences so we can use 400 watts! Linda G0AJJ had a go in her local area which was great.

We missed our ZL YLs with only Celia ZL1ALK managing to squeeze in a few contacts. The solar cycle is improving so we hope for better conditions next year.

Gerald VK2HBG was the top VK OM again!

The OMs seemed to have a great time and were also disappointed in the lack of YLs. One VK2 OM said, "My first ALARA Contest but won't be my last – if only I could have heard more YLs!!" He was also disappointed not to hear any YLs on VHF or UHF.

I am particularly pleased that Mike VK3AVV has been awarded the Top VK3 OM as he went to all the trouble of producing the logging program for the VHF/UHF Section which only I used! Thanks Mike.

Out of all the logs I received, 13 were the computer logs using Mike's program. The ALARA Contest is a great one to practice your computer logging on as the YLs generally like a bit of a chat which gives you time to enter your log!

I was also chuffed to receive Neil VK4FHYH/8 log and picture showing his mobile outfit with a 10 metre squid pole as an antenna.

Do not forget the last weekend in August is always the ALARA Contest. I look forward to being inundated with your logs.

VHF/UHF An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

There has been a bit of tropo action during the month with openings across to the west from the eastern states.

On the evening of September 21st, signals were strong between VK5 and VK2. Leigh VK2KRR at The Rock in central NSW was putting 5x9 signals into the Adelaide area on 2 m working Garry VK5ZK, Jeff VK5GF and several others. John VK2YW in Wagga also worked Garry VK5ZK for his first VK5 contact, followed by several other VK5 contacts. David VK5AYD in Coober Pedy also worked a number of stations in Adelaide for the first time.

The following evening, signals had dropped right off. However, VK6DZ reported hearing VK5VF on 2 m at 4x1. VK5AKK reported hearing VK6REP on 2 m at 5x1.

On the 23rd, things improved with good propagation between VK2, 3, 5 and 7. On 1296 MHz, Mike VK3KH worked Garry VK5ZK (5x1) for the first time and Phil VK5AKK (4x1). The VK7RAE 2 m beacon (now GPS-locked) was also being heard in VK5, peaking to S9 at one stage. Leigh VK2KRR was putting a big signal into Adelaide on 1296 MHz working VK5ZK (peaking to 5x9+20), VK5GF (5x9) and VK5AKK (5x9). Leigh was also seeing faint traces of VK6REP on 2 m, peaking to 4x1.

Next day, the good conditions continued. Phil VK5AKK made it across to Canberra on 2 m working VK1CJ, VK1DJA, VK1BG and VK1KW. Phil then worked Steve VK2ZT (5x1) on 2 m over a distance of 1240 km. Brian VK5BC also worked Steve.

Barry VK3BJM also got into the fray:

Having spent Thursday 23rd September in Royal Melbourne Hospital in a state of anaesthetised ignorance of what surgeons were doing to my knee, I was a little slow in turning on the FT-736R on Friday morning. In fact it was nearly lunchtime (0135Z 24/9/2010) when I took a look west to the VK5VF 2 m beacon, having not heard anything on 144.1 MHz. Knee injury notwithstanding, you could have knocked me down with a feather - VK5VF was 599, pushing into the red on the guessometer.

I returned to 144.1 and heard Brian VK5BC, calling; he was 56. I called him and received a 52 - this was with less than 20 watts, as I hadn't turned on the AM-17 at that stage. Gordon VK3EJ was about and 57 off the side of my array.

I then took a look to the northwest; VK3RRU in Mildura was 589. VK5RSE was only 569 on 2 m, though; the better enhancement was to the west/ northwest of me. At 0156Z, I logged the VK5VF 70 cm beacon at 419; I could not hear anything of the 23 cm beacon.

At 0208 Z I worked Phil VK5AKK on 144.1; he was 59. At 0211Z, Gary VK5ZK was worked at 54. Attempts on 70 and 23 cm with Phil, and 23 cm with Gary were, sadly, unsuccessful. QSB was starting to set in on VK5VF 2 m, but it remained audible for the rest of the afternoon at about 529 or so. It was back up to 569 when I took a peek before hitting the sack, at around 1000Z.

The next morning (Saturday) offered nothing from VK5VF, though Bill VK3LY was worked from Nhill at 56 with QSB, and Pete, VK5PJ, was worked at 53 via AE. At this time the VK Logger was down, due to an ISP issue. Adam VK4CP had it running again by 2252Z.

Sunday morning, VK5VF was back; I logged it at 549 at 2210Z; VK3RRU was 539 at 2212Z. At 2203Z, VK5BC was in the log at 51; Geoff VK3FIQ was a healthy 58 from Stawell. Andy VK5LA followed at 2316 at 51-2. Then, having been overstimulated by what the Hepburn Chart suggested might be possible and the VK5VF 2 m beacon getting up to 579 at 2329Z, I ran a keyer towards David VK5AYD in Coober Pedy, and David ran one at me. Sadly, apart from numerous meteor pings, no tropo-supported contact eventuated. At 0032Z, Peter VK5PJ was worked on 144.100 at 57, and 432.150 at 41.

Weak Signal First Experience

Ian VK1FOTO enjoyed his first time with portable SSB operation on 2 m:

Wow! What a morning. Well worth the effort and definitely something I want to try again!

This morning (October 8) I got up nice and early all inspired to give some 2 m SSB a go from Red Hill (QF44NP). Admittedly, I got there a bit later than planned, but still I was on the air by about 0810 local time.

Straight away there was activity heard and the calls were being made. In the end a one hour effort resulted in successfully making six contacts on 2 m and two contacts on 70 cm - glad I bothered to check the SWR of the dipole last night on both bands so that I knew 70 cm was an option. I also heard quite a bit of activity down around 4/1 to 5/1 but those of which I tried could not hear me. That said though, I made a partial contact to VK3DUT which I was rather happy with.

I could hear VK3DUT 5/1 without a problem, but in the end he could only get a partial on my call sign (reporting VK1F something) and reported me at 4/1. Eventually this path faded so I'm wondering if that was maybe my first attempt at some aircraft enhancement?

That also said I was very impressed with the contacts I made to VK2DO down the coast at 5/8 and also VK2GKA in Penrose, NSW. Oh, and I did have another partial contact with VK2KOL in West Sydney but in the end all he heard of me was VK1.

So in the end the list of contacts were:

VL2DO - Long Beach, VK1CJ, VK1BG, VK2GKA – Penrose, VK1PWE and VK1KW.

Partial contacts with VK3DUT and VK2KOL.

Heard clearly, but no contact with VK2EMA – Tottenham.

And this was all done with a simple dipole and an FT-817ND transmitting 5 W. It is truly impressive the range increase you get with SSB compared to FM. That smaller bandwidth really makes a change, and also the fact you can have completely readable signals that aren't even registering on the S-meter.

One other good thing was that setup and tear down each took less than 5 minutes. So, minimal hassle on the way to work of a morning and definitely do-able when dressed in a suit.

I definitely look forward to doing this again! I'm impressed by the level of activity and the ease with which one can have a pretty good level of participation (minimal antenna setup, minimal power level). Plus, I'm now really keen to have a week-end when I can get my beams active!!

See photo 1:

New 47 GHz VK3 State Record

Charlie VK3NX and David VK3QM have been exercising their new 47 GHz setups. Charlie reports:

David VK3QM and I have been working on getting active on 47 GHz. In addition this new enthusiasm has seen David make a last run attempt at getting his much awaited 24 GHz system operational. As it stands we now have some reasonably well performing 47 GHz transverters operational and decided recently to see what can be achieved as well as taking the opportunity to try some 24 GHz contacts.

Both 47 GHz transverters are based around ready-built Kuhne 47 GHz transverter modules. Both modules are reported to be delivering 0.170 mW and a noise figure of around 6.6dB. To these we built and added the LO chain consisting of a G8ACE OCXO running at 122.250 MHz feeding a DB6NT 12 GHz LO multiplier kit. These deliver well in excess of 40 mW (up to 80 mW!) to the transverter at 11736 MHz.

Photo 1: VK1FOTO Portable Setup.

David fabricated two 120 mm horns which theoretically would deliver 25 dB of gain and after packaging up our assemblies and running some initial tests at my place we were both keen to see how we would go on this band.

On October 11th, I headed up to our field day site in the Barabool Hills and David became the rover station. Initial contacts at 5 km and 19.6 km proved very easy and having already surpassed the previous VK3 record of 18.1 km on this band we were confident of extending it even more. David proceeded to a spot at 28.2 km distance and again at 29.2 km the signals on both 24 and 47 GHz were still good.

At 29.2 km, reports of 52/53 indicated that we might be reaching our limit. The day was warm at about 24 degrees C at this stage and the humidity was in the mid 60s. Our initial path loss calculations had us max'ing out at around 30 km. We decided to try a greater distance and to our surprise a line of site path at 0429 UTC from QF21CU to QF12WC produced 5x3 signals both ways over a 39.0 km path.

The improvement from the 29.2 km path was put down to a much better take-off.

Given that there was still some headroom in our systems, we decided on trying yet a further path and after finding a location at 47.5 km distance and after some initial QSB, David and I had a 5x1 /5x1 contact on SSB at 0512 UTC. Unfortunately I had other commitments and we were unable to try any greater distances.

It was very gratifying to work these distances with such a modest setup and we are already planning the addition of 30 cm dishes and increasing our power from 170 uW to about 20 mW. We are looking forward to trying over greater distances and more importantly, exploring propagation on this band. We were both extremely pleased with how both transverters worked and how stable the OCXOs were in practice.

We were able to "chat" for about 10 minutes each time without the need for retuning and I feel that our weak signal capabilities were enhanced by using free-running local oscillators as opposed to PLLs.

As an aside we also had some excellent contacts on 24 GHz with signals always 59+ both ways. Both 24 GHz systems run between 100 and 600 mW into 30 cm dishes and employ similar OCXO and multiplier chains. We also look forward to trying over longer paths on this band.

New 24 GHz VK2 State Record

Following on from last month's report, Doug VK4OE advises that he and Wayne VK4WS have been busy and have established a new VK2 distance record for 24 GHz. Doug writes:

I just thought a short mention here is in order to say that Wayne VK4WS and I this afternoon (1/10) increased the VK2 distance record for the 24 GHz band to 170.5 km. This was the same distance and same path (give or take twenty metres or so) that we used for extending the VK4 distance record four weeks ago.

The reason that it is essentially the same distance is that the car park that serves the 'Best-of-All' Lookout on Springbrook Mountain actually straddles the Queensland-NSW border. Four weeks ago we did try to 'do' the VK2 record as well, but increasing rain and weak signals at my end precluded that.

Earlier this week after adding a low noise pre-amplifier in my IF line, Wayne and I brought both units together and optimised their performance on both Tx and Rx. We reckon that we obtained at least a 6 dB improvement, which has led to today's contact being easy to complete (after some initial headaches associated with dish alignment and rainforest tree leaves a few hundred metres away from where I was).

As there was some rain on the path (closer to Wayne's end this time) we reckon that there is still a good deal of potential left in the performance of the two transverters with respect to possible further extensions of distance records for this band.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur VK7MO

WSJT9 has now been publicly released as a beta version. It includes:

- Echo mode for EME station performance testing
- ISCAT for ionscatter on 6 metres
- An improved detector for FSK441 which gives fewer garbage decodes
- Experimental mode JTMS for meteor scatter
- Experimental mode Diana for EME
- An improved GUI

It has been found that the timing of echoes in Echo mode can be out due to latencies in some versions of the Windows operating system and specifically XP. The problem can mean the receiver is only listening to half of the period that echoes are received and thus give lower echo values than should be the case. This has been resolved in revision r2177 and should be sorted out in the next public release of the program.

Dave VK2JDS, Phil VK4CDI and Rex VK7MO have been testing the Diana mode on 1296 EME. Dave has reported some timing problems with this also, which should be resolved in the next release of the program. Initial tests show that its performance is a few dB below that of JT65c at 1296.

The VK-ZL meteor scatter group has been testing JTMS on the weekend activity sessions. While the results show it decodes around 5% more characters on stronger pings, it is no better than FSK441 on weaker pings.

Overall we have concluded that the small advantage of JTMS is not sufficient to justify a change and, at least for the time being, activity sessions will continue on FSK441.

GPS-Locked VK7RAE Beacons

Joe VK7JG has now installed the GPS-locked 6 and 2 metre VK7RAE beacons at Don Head, Northern Tasmania. The details are:

6 metres - 50.057 MHz, 20 watts to omni-directional antenna, idents every 45 seconds.

2 metres - 144.474 MHz, 20 watts to omni-directional antenna, idents every 5 minutes.

Tests on 2 metres show the beacon frequency to be within 0.05 Hz which is as close as one can measure at a distance due to troposcatter spreading.

The two-metre beacon has almost 5 minutes key down period to allow for very narrow bandwidth experiments such as looking at the variation of troposcatter spreading which it is expected will decrease during ducting.

Because of the long key down period, it is also useful for long term meteor scatter monitoring for those within 2000 km. If you tune to 144.473 you should copy pings at 1000 Hz plus/minus the Doppler. 1000 Hz should give shorthand decodes of R27 at a DF of -118 Hz on WSJT's FSK441.

Counting the number of R27 decodes over an evening will give you an idea of the variation of meteor activity and the variation of the DF some idea of the variation of meteor scatter Doppler on 2 metres.

A similar test could be done on the 6 metre frequency where the pings are much more frequent.

Thanks go to Joe VK7JG for modifying and setting up the beacons and providing the PA units, Dave VK3HZ for designing and constructing a reverse DDS exciter that derives the carrier from the GPS, the Northern Tasmanian Amateur Radio Club for funding the exciter units and Rex VK7MO for providing the GPS unit.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au

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www.wia.org.au/bookshop

The Magic Band – 6 m DX

Brian Cleland VK5BC

6 m has continued to be disappointing with very little to report. The equinox came and went with no significant openings. The only activity has been from northern areas of Queensland and Darwin.

Mark VK8MS in Darwin has managed some good contacts to the north in the second half of September. Openings occurred on the 15th, 16th, 18th, 20th 21st, 22nd and 26th September and 1st October. Mark has worked several Japanese & Chinese and East Malaysian stations as well as Willem DU7/PA0HIP, Charlie VR2XMT and Joel KG6DX in this period. Good work Mark.

Gary VK4ABW near Townsville reports the following:

20th Sep, early evening BY TV rose to S9 and I caught up with Ken JE1CUS S5 at 1100Z. The band was not very stable and Ken called a few more times but there were no takers.

22nd Sep, early evening BY TV again, rose +10 dB and I worked Hide JR6EXN S9 at 1145Z for a quick one. I had both JA2IGY and JA6YBR beacons in for about 30 minutes before they faded away.

23rd Sep, afternoon TEP BY TV rose quickly to +20 dB and I worked Mitsuru JA9SJI S7 at 0605Z. He called many times but there were no takers this end.

28th Sep, early evening BY TV rose to +20 dB and I heard Hide JR6EXN working Mark VK8MS shortly after. The JA2IGY beacon was S3 for about 20 minutes but no other stations were heard.

Meanwhile John VK4FNQ in Charters Towers worked JR6EXN on 22nd September and then on the 23rd worked several JAs including JA2BNV @ 59 SSB, JH1WHS @ 59 SSB, JF2RDG @ 57 SSB, JK1JXB @ 55 SSB, JA1RJU @ 59 SSB, JL3LSF @ 55 SSB. John VK4TL also worked several JAs on the 23rd.

On the 1st October, JAs were worked as far south as Yeppoon by Ray VK4BLK and Sapphire by Brian VK4EK. Brian reports he worked JA1RJU 0455 UTC @ 5/9 SSB and JA3EGE 0455 UTC @ 5/8 SSB. At the time JS2IR DATA ON 43.659.5 MHz was peaking 5/9.

Willem DU7/PA0HIP has recently completed building and erecting 2 x 7-element Yagis on the 28th September. Willem had immediate success and reports working several JAs on the 28th and on 1st October VK4s TL, ABW, FNQ all 59+ and VK4ZFC 57. Willem reports signals stronger than he had previously received. It will be interesting to hear Willem again during our summer season. Willem's antennas are pictured below:

Brad VK2QO who coordinates the meteor scatter contacts each morning reports the following:

Not a lot of contacts this month but when they were made some big signal reports were exchanged with 59 both ways but most were around the S1 to S5 mark.

The main showers for September were the September Perseids and the delta-Aurigids, both class 2. I was absent for two weeks this month while a few others helped me mount my 6 m beam on top of the new tower. Here are some contacts made for during those two showers:

The September Perseids:

8th: Glenn VK7AB 53 at 970 km, Frank VK7DX 54 at 896 km, Dave VK7DD 51 at 864 km, Brian VK4EK 53 at 1264 km, Ron VK4CRO 51 at 812 km.

9th: Brian VK4EK 53 at 1264 km, Glenn VK7AB 55 at 970 km.

10th: Frank VK7DX 55 at 896 km, Glenn VK7AB 52 at 970 km.

11th: Wayne VK4WTN 53 at 1049 km.

Then a two week absence.

The delta-Aurigids:

28th: Wayne VK4WTN 52 at 1049 km, Brian VK4EK 55 at 1264 km...

29th: Frank VK7DX 59 at 896 km and again at 55 half an hour later, Brian VK4EK 57 at 1264 km.

A few stations are having a lot of success with the digital modes on 50.230 such as FSK441, JT65 and some of the new modes such as ISCAT. SSB contacts take place on 50.200. The 2000 km barrier was finally broken when Frank VK7DX and Brian VK4EK had a contact at 2058 km on the 28th September at 2235Z. Congratulations Brian and Frank.

I apologise for the lack of notes in the last couple of magazines but I was away on an overseas holidays. Fortunately for me and unfortunately for 6 m operators, there was not a lot to report. Let us hope the coming summer season provides some surprises.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com **ar**

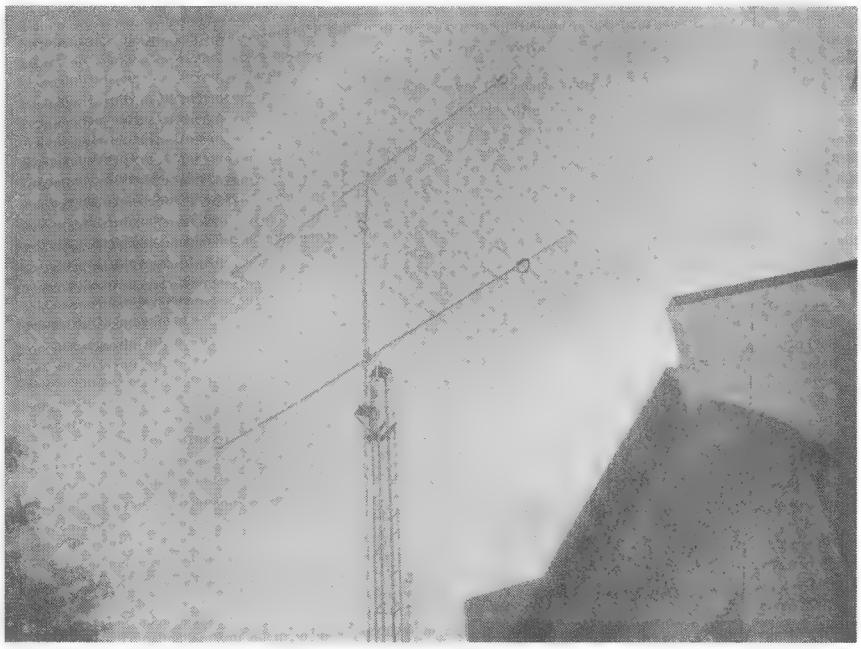


Photo 2: The 2 x 7-element Yagis built by Willem DU7/PA0HIP.

VK100WIA 'Super Springtime' in Perth

Heath Walder VK3TWO/VK6TWO

World focuses on Perth as it celebrates 100 years of organised amateur radio

September 20 to October 2 saw the activation of the VK100WIA callsign for the "Super Springtime" event in Perth:

The twelve days of theVK100WIA callsign activation was officially shared by WICEN WA, Scout Communications Team, WA Repeater Group, and the WA VHF Group. Seven Perth radio groups formally supported the operation and public display for the two weeks, including Hills AR Group, Peel AR Group, and Ham College.

Public displays at the Perth Royal Show, and historic Wireless Hill officially operated for the eight days of the Perth Show, yet many members of the public dropped in the week prior whilst we were operating the VK100WIA callsign. WIA "Calling CQ" and "Ham College" brochures were handed out, as well as VK6 club contact information.

Display items included APRS tracking, satellite tracking, software defined radio, propagation and path plots, RF spectrum charts, D-STAR, EchoLink, IRLP, using satellites, satellite antennas, homebrew antennas and test equipment etc.

Due to the high level of RF noise, most of the operating radio equipment was located at Wireless Hill (including all of the HF gear) and was remotely controlled from the Showground. A video link between the two sites also allowed members of the public to talk on the radio and see to whom they were talking.

With Wireless Hill celebrating its 98th birthday during the "Super Springtime" event, and all of the fascinating history originating from Wireless Hill, the closeness of the two centenaries made it a very special location for the event.

The Melville City Council backed the event, offering a paid advertisement in the local paper. Media releases also went out to almost all of the newspapers in Perth and surrounds so publicity was rather widespread.

Each Day Bob VK6KW operated the Australian Travellers net on 14.116 at 0200-0330Z using the VK100WIA callsign. Jim VK6JP also ran the weekly WICEN weekly nets on 3.600 and 146.750 of a Wednesday evening.

Heath VK3TWO/VK6TWO operating VK100WIA Super Springtime Public display within Scout area at Perth Royal Show.

Sunday 26 September saw a live WIA National News broadcast from the "Super Springtime" Perth Royal Showgrounds. Bob VK6POP and Heath VK6TWO read out several articles for the national news, followed by the local VK6 NewsWest and callbacks.

That Sunday saw over 200 callbacks to the WIA National News, possibly the highest on record. A big thanks goes out to all those who listened and checked in after the news. Also huge thanks go out to Dennis VK6KAD for all of his efforts in preparing for a VK100WIA National News Broadcast. Unfortunately Dennis' health took a turn just a few days prior to Super Springtime so he had to resort to listening on a handheld from a hospital bed. Get well soon Dennis!

On Tuesday 28 September, the milestone of the 20,000th VK100WIA contact was made from the Perth Royal show between Heath VK6TWO (operating VK100WIA) and Bob VK6POP handheld portable also at the Showground. Video footage from both ends of the conversation was recorded live and can be found on YouTube at www.youtube.com/user/VK3TWO

"Super Springtime" saw around 2,200 contacts, most overseas, with many several-hour pileups to EU most nights. Several operators, mainly Heath VK6TWO, Monique VK6FMON, Marty VK6FDX, Ray VK6ZRW and Jim VK6JP operated to around midnight and beyond most nights when openings to EU were open.

One night in particular saw about a three-hour pileup into EU and at 0130 WAST, whilst still open on 20 m, the operators were just too tired to continue. Many mornings also saw some good openings to North and South America. VKlogger.com and DXSummit.fi proved to be very effective tools for DXing.

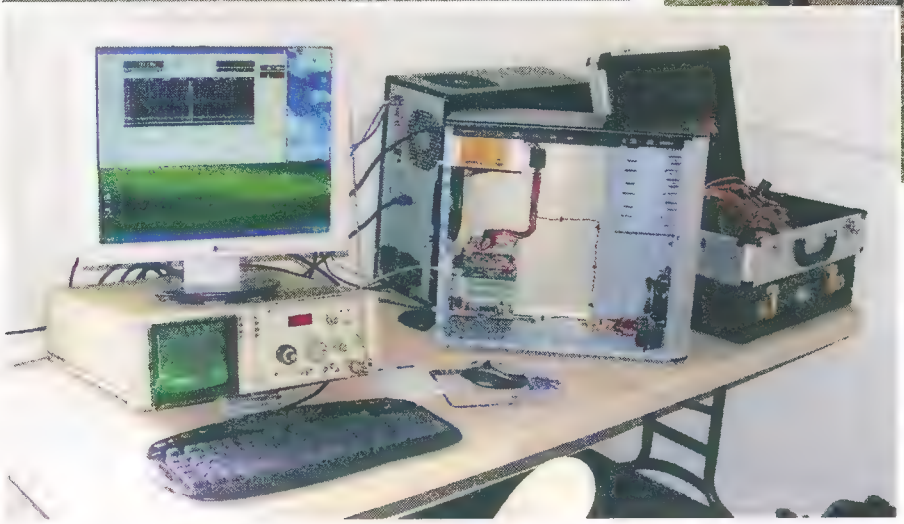
Footage of some of the Pileups can be found on YouTube at www.youtube.com/user/VK3TWO

Event organiser Heath VK3TWO/VK6TWO said "our week long public displays at both the showgrounds and Wireless Hill gained much attention and we expect several dozen new licences to come out of it" The event was very educational for many involved to prepare for the new

Continued on page 56

Fritz VK6UZ's portable station at VK100WIA Super Springtime @ Wireless Hill.

Above: Bob VK6KW working hard each day on improving our antennas – Installing 6el log periodic at Wireless Hill.



At left: WA VHF Group's SDR construction project on public display at Wireless Hill.

VK5news

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

"Now this little jigger..."

September was a particularly busy and interesting month for AHARS. Our meeting was a "My most useful items" night. A number of members brought along the things they find most useful for them in their radio activities.

John VK5BJE brought along his handhelds. He has all the handheld radios he has ever owned and what is more they all still work. Rob VK5RG brought along a container full of the tools he keeps on his bench. For Hans VK5YX it was a syringe of flux paste which he finds invaluable for working on surface mounted devices.

For Erich VK5HSE it was a flat bed plate for heating surface mounted boards so that the solder melts evenly. He tried a 'commercial' heater but found that one made from a cheap cooking plate worked much better. He made an external frame to support the works while it heats. This also has saved him some burned fingers!

Another useful tool for working on surface mounted devices is the vice Mark VK5AVQ designed. Barry VK5ZBQ brought along an AVO meter vintage 1930 which, with its mirror scale has an accuracy of better than ±1%.

Trevor VK5ATQ showed a set of simple traps made from electrical wire that convert an aerial to work on 20 metres or 80 metres very quickly and easily. John VK5EMI had a magnifying lens to wear on his head, a nibbler and a set of small tools mounted in a very nice zippered pouch, that his XYL found in the haberdashery department!

Another member with old but very accurate meters to show was Lyle VK5WL but he is also delighted to spend time rubbing down and re-varnishing the cases that some of these meters were housed in originally.

David VK5KC had a capacitor/ resistance bridge that he had made up from a kit that he finds very useful. Keith VK5OQ also had something he had made up – from one of the Drew Diamond designs in *AR* – a sheet metal bender.

The collection of tools that Rob VK5RG keeps close to hand.

Buy and Sell

The annual Buy and Sell will be held on Sunday 7 November at the Goodwood Community Hall. Doors open at 9.30 am.

For Wal VK5YW it was a grid dip meter including a globe on a couple of wires and some lecher lines (if you remember these you have been an amateur for many years).

The AHARS Technical Seminar: a Diamond in the Hills

As advertised in *AR*, this was held at the Belair Community Hall on Sunday 19 September. Before the door opened there was a queue of people waiting to come in. Altogether 85 people attended (including four students from one

A 10 GHz receiver and horn antenna used to receive the 'mobile' radio station located outside the hall.

of the TAFE colleges). All found something of particular interest. The lunch and morning and afternoon teas were pronounced to be excellent and more than ample.

Drew Diamond VK3XU.

The lectures ranged from two by Drew Diamond in which he spoke of some of the items that have appeared in AR from time to time and others that had not. The demonstration items he brought along were very good.

Phil Harman explained the principle of high performance software defined radio very clearly and his talk was backed up by the working station set up by Hans VK5YX.

Rob VK5RG gave a talk about early SSB when the amateurs were experimenting with this new medium and were building their own phase modulated equipment because there was no commercial manufacturer prepared to make radios that may represent just a passing phase – no pun intended.

Keith VK5OQ and Iain VK5ZD demonstrated different systems used for transmitting and receiving on UHF and SHF. Several large dishes were assembled to be examined and some very small components (designed to operate on very short wavelengths) such as wave guides and mixers were passed around to be studied.

The lecture ended with a two-way contact from inside the hall to a (very) mobile station out in the car park. The vehicle in the car park looked like an angry porcupine and could operate on everything from SHF to 160 metres.

To end the day Graham VK5ZFZ showed us a number of techniques for making very professional looking front panels for your home brew equipment.

As well as the hpsdr of Hans', there were several other items to be studied in the breaks: antennas, amplifiers and other items of interest.

ar

A commercial grid-pack style antenna put to good use by amateurs on 2.4 GHz.

A view inside one of Drew Diamond's transmitters, showing the coils he winds himself.

AMSAT

David Giles VK5DG
vk5dg@amsat.org

A review of the CD-ROM of the issues of the journal of AMSAT-UK

OSCAR NEWS is the official journal of AMSAT-UK and is published around six times a year. Recently they compiled all the issues from February 2000 to December 2009 onto a CD-ROM. This month I present a short review of the CD.

48 issues on one CD

According to the AMSAT-UK website the CD contains "more than 2000 pages of information about amateur satellites ranging from homebrew electronics projects to scientific papers, this archive offers an intriguing insight into the development of amateur radio satellites during a fast moving decade" [1]. The 48 issues (and a report on the AMSAT-UK Colloquium 2002) are in PDF format and a copy of Adobe Acrobat for Windows is included to view them. You can use your current PDF file viewer as well.

Generally each issue contains news for AMSAT-UK members, articles from members, as well as regular columnists. Some articles have been sourced from other journals such as the AMSAT-NA Journal.

Many satellites are covered from AO-40 to the latest cubesats as well as missions from other space agencies. The International Space Station gets plenty of coverage too.

Homebrew projects

Among the construction articles there are details on building a "Space radio for Windows" (a simple 2 m receiver controlled from a printer port), 70 cm parasitic Lindenblad antenna, homebrew Azimuth-Elevation rotator and controller, and a low noise 70 cm pre-amplifier. Scattered among other columns are various "hints and kinks" but these are not highlighted in the index.

Beginner's section

Clive Wallis G3CWV presents a semi-regular column entitled, "Haven't got a licence? Then this page is for you". Clive wrote a regular report on OSCAR-11. While UO-11 and BBC BASIC computers feature regularly in his column, he deals with many other topics such as antennas, software for various systems and even the solder used in spacecraft.

Brian Catchpoole M0TAD gives a five part series, "Diary of a newbie" from 2002. Here he writes on the trials of pursuing the goal of making a QSO via AO-40 with homebuilt equipment. All this within a year and not much previous experience.

But wait, there's more

Here is just a sample of articles that caught my eye:

"Operating portable from the Cairngorm National Park Scotland" by 2M1EUB/P - an FT-817, a small azimuth/elevation rotator setup on an electric bicycle.

"Sputnik – some personal recollections" by various contributors.

"Well it's been a wonderful day" by Graham Shirville G3VZV – a blow-by-blow description of the days before launching SSETI express (XO-53).

"S-Band and X-Band Deep space Reception" by Paul Marsh M0EYT – on how to build a modest receiver to receive interplanetary spacecraft.

"The Joy of ISS" by Ciaran Morgan M0XTD-the story of the Budbrooke School ISS contact with Richard Garriot W5KWQ.

"Homebrew satellite rotator" by Ray Benitez M0DHP – uses a screwjack for elevation and fully computer controlled.

How to get it

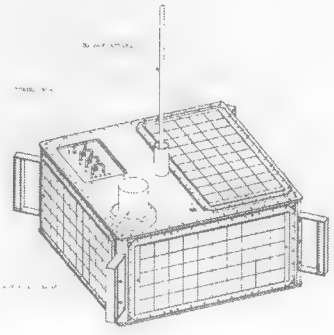
The CD-ROM is ordered over the Internet from the AMSAT-UK website. Total cost of CD-ROM and postage was around $40 (allowing for currency exchange rates). If you use their distributor www.lulu.com, you will be asked to register with them. This will allow you to order their other publications. (Un)fortunately they will also email you with other specials.

Summary

From homebrew electronics projects to scientific papers sums this CD nicely. There is a broad range of articles for beginner to experienced satellite user.

Up to issue 184, the pdfs come from scanned paper issue so the print quality is fair. After that the pdfs are straight from their computer files with excellent quality. Overall I was pleased with the purchase.

ARISSat-1 update



By the time you read this, the two ARRISat satellites will be in Russia. They passed their vibration tests during September and shipped to Russia during October.

The flight version will have the Kursk University experiment and its Orlan spacesuit battery installed and tested. ARISSat-1 will be sent to the International Space Station during January 2011 ready to be thrown out into space during February. ARISSat-1 has also been named RadioSkaf V by the Russians. RadioSkaf-1 was the Russian name for SuitSat-1. Congratulations to the team for getting to this important milestone [2].

Future launches

Euroconsult is a consulting firm that specialises in the space industry. In a recent report they predict there will be 1220 launches worldwide during the next 10 years.

At an average of 122 per year, this is a big increase from the average of 77 launches per year for the last decade. They predict about one third will be military satellites while government satellites will make up the majority of the rest.

They also predict that Earth observation missions will make up 267 launches with governments spending more on scientific and exploration missions.

Commercial satellites will mostly be sent to geosynchronous orbits and these will make an estimated 214 launches. A new constellation of communications satellites will be launched into Medium Earth Orbit (MEO). MEO is the range between 2000 and 25000 km high.

The zone between 6000 and 13000 km lies between the two Van Allen radiation belts. The other MEO zone between 20000 to 25000 km lies above the upper belt.

The new constellation will be supplied by O3b networks consortium and will provide satellite internet services [3]. O3b stands for the "Other 3 billion" and refers to the world population that have difficulty getting broadband internet services.

This will replace the first generation communication constellations by Iridium, Orbcomm and Globalstar. A copy of the report can be found at the Euroconsult website [4].

Final Pass

ARISSat is another step forward for AMSAT as it will be the first software defined transponder in an OSCAR satellite. The technology will be used in future missions and there are still two more ready if a suitable launch occurs.

On a personal note, I hope to have my renovated shack finally finished and fully operational by the time this issue is on the shelves. Then I will have more time to read the rest of the OSCAR NEWS.

References

[1] http://www.uk.amsat.org/

[2] http://arissat1.org/

[3] http://www.o3bnetworks.com/

[4] http://www.euroconsult-ec.com/news/press-release-33-1/37.html

AMSAT-VK

AMSAT Co-ordinator

Paul Paradigm VK2TXT

email coordinator@amsat-vk.org

Group Moderator

Judy Williams VK2TJU

email secretary@amsat-vk.org

Website
www.amsat-vk.org

Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.

AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net

Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales

VK2RMP Maddens Plains repeater:146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland

VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia

VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.

Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

Spotlight on **SWL**

Robin Harwood VK7RH

I was so disappointed that Radio St. Helena cancelled the proposed DX test, originally scheduled for the ninth of last month. Apparently the rotors on the beam could not be repaired and because of the island's remoteness, suitable spares could not be procured in time. They say they are going to try again in 2011. I certainly hope so.

Radio Sweden International also departed shortwave on 31 October. It looks as if the Greenville shortwave senders have been given a reprieve for now, allowing the VOA/ Radio Marti programming to continue. Radio Slovakia also looks as if it may continue but only in the short term.

Propagation is so slow in returning to normal. Some experts are still convinced that we are in for an extended period of sunspot lows, which has thrown into question the 11 year solar cycle theory.

I note that Laos on 7145 has gone again but it is unclear if this is permanent. I have heard a much stronger outlet on 6130 with different programming. The weak station on 7189.9 has been identified as being in Tamil and from Colombo. It signs off between 1200 and 1215. I do expect that we will be hearing Africans on the LP around 1900 to 2100 in the extended amateur allocation between 7.1 and 7.2 MHz. I have heard Americans working ZS on remote tuners. It is possible that Australians could work them.

I noted an American religious station on 9479 at 2200. It is WTWW, in Tennessee. I thought it must be a technical fault but apparently they were forced to move a kilocycle because the 16th harmonic caused QRM to 2-way communications on a local school bus run. How odd!

That Chinese OTHR must be causing headaches as it is so wide and intentionally puts out harmonics as well. It is between 6.8 and 6.9 MHz but can be much wider and easily infiltrates the 40 metre CW segment. I have noted it as low as 5 MHz and as high as 9.3 MHz, especially during our local evening hours. Some speculate that the system is based on Hainan Island in the Gulf of Tonkin.

The presumed location of the OTHR on higher frequencies is rumoured to be Akotiri, Cyprus. It is not as wide as the Chinese system but if anything much stronger. I presume this system is focused on the Middle East. Another source tells me that there is also a French system operating on the higher frequencies also. I wonder if the Australian Jindalee system is still operational? I seem to recollect that it closed down.

Well that is all for November. Hopefully propagation will improve soon.

73 de VK7RH **ar**

WIA Situations Vacant

WIA Volunteers

The WIA Bayswater office is always looking for suitably qualified volunteers – or just volunteers!

If you are able to give the Office a certain number of hours on a regular basis, or are otherwise interested in assisting with the administration of the Institute or its activities, please write to, or email, Mal Brooks VK3FDSL at the address below.

If you have any experience or qualifications that you think may assist, please be sure to also set them out.

Mal Brooks VK3FDSL

malb@wia.org.au

PO Box 2042 Bayswater, Vic., 3153

Publications Committee

A limited number of volunteer vacancies exist on this committee. See editorial on page 2 for details.

WIA Awards Scheme

The WIA Awards Scheme has been developed to a world class level. It is managed by a committee who are responsible to the Board for maintaining the highest standards of award assessment.

The committee assesses existing awards and proposes to the WIA Board any changes and additions, with the WIA Office providing administrative support.

The Awards Committee is headed by the Awards Manager, who is responsible for making initial assessments of the validity of claims for credits towards awards and to advise other members of the committee of claims for such credits.

The current Awards Manager, Eddie VK4AN, has decided to retire at the end of his current term and a replacement for him is sought.

WIA members and existing Awards Committee members are invited to register their interest with the Director responsible for the Awards Scheme, Chris VK5CP, at vk5cp@wia.org.au by 30 November 2010.

The new Awards Manager will work with Eddie during a handover period to be determined and take on full responsibilities in May 2011 (or earlier by agreement).

There also exists a vacancy for an additional Awards Committee member, to start immediately.

Expressions of interest for that position are also requested to be submitted to vk5cp@wia.org.au by 30 November 2010.

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New South Wales/ACT Advisory Committee
Email: vk2advisory@wia.org.au
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*Denotes nominated by the WIA Board ("Nominated Member")

Super Springtime continued from page 49

National Field Day. The Hills AR Group hope to operate from Wireless Hill Park (Field) for the NFD, utilising many of the items used from Super Springtime.

Being co-located with the Scouts at the showgrounds, JOTA was a VERY hot topic! Entire Scout and Venturer groups enquired about radio courses and badges. The WA Scout Communications team are going to be very busy with both Foundation and Standard courses planned in the coming months.

The WA VHF group dedicated several monthly meetings towards "Super Springtime" and a special thanks goes out to Bob VK6KW (President), Terry VK6ZLT (Secretary) and Heath VK6TWO(Vice President) for their efforts in organising and preparing for the public displays and preparing Wireless Hill for operations.

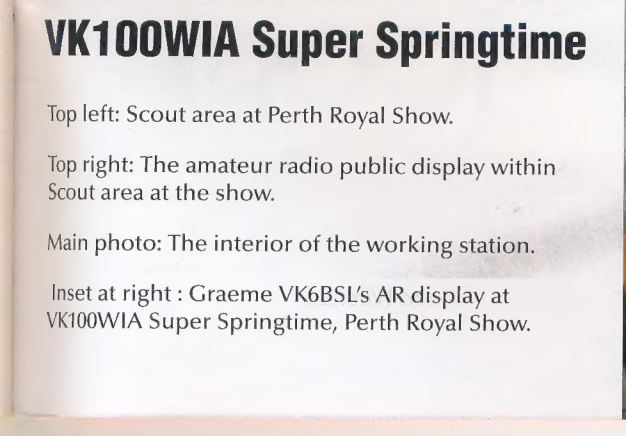
Huge thanks go out to all who supported the event and offered equipment and time toward its success. Very special thanks goes out to Heath for his efforts in preparing the event, not to mention the 16+ hour days over the whole two weeks.

Footage from the Super Springtime event can be found at www.youtube.com/user/VK3TWO **ar**

VK100WIA Super Springtime

Facing page: Some shots of the group-moumted and managed display as part of the Scout compound at the Royal Perth Show.

Hills AR Group meeting excursion to Wireless Hill.



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KIT SETS
MOST HOBBY RADIO AND ELECTRONIC GEAR OPERATES FROM APPROX 12 VOLTS SO THAT CHILDREN ARE QUITE SAFE IN THIS LIGHT HOBBY. BUT CHECK BEFORE OPERATING!
HERE ARE SOME GUIDES AND BEGINNERS OPERATING FROM A "HAM" SHACK FOR JOTA WEEKEND. (SOMEBODY ON THE AIR) AND TALKING TO OTHER GUIDES/BROWNIES/ SCOUTS ALL OVER THE WORLD IN OCTOBER. THIS IS THE ONLY TIME NON-LICENCED PERSONS ARE ALLOWED TO USE THE HAM BANDS.
AS LONG AS YOU CAN TALK AND THINK A FEW WORDS MORE IS A HOBBY THAT YOU CAN GET UNENDING PLEASURE FROM WELL INTO YOUR ADVANCING YEARS, REGARDLESS OF AGE AND DISABILITIES AND OPERATING MAINLY FROM YOUR OWN HOME.
YOUR GOVERNMENT LICENSE IS OBTAINED AFTER ABOUT A YEAR OF STUDY AT EITHER CLASSES CONDUCTED BY LOCAL RADIO CLUBS OR CORRESPONDENCE COURSE AND PASSING A "MORSE" EXAMINATION AND THEORY EXAMINATION.
FOR ABOUT $200-$250 YOU CAN PURCHASE USED GEAR TO GET YOU ON AIR, TALKING TO OTHER AMATEURS ALL OVER THE WORLD AND MAKING SOME LASTING FRIENDSHIPS. (THERE ARE 2-3 WIVES WHO ARE ON AIR!)
FOR FURTHER INFO CONTACT....
WICEN/A INSTITUTE OF AUSTRALIA PH 08-9351 8826
NORTHERN SUBURBS RADIO CLUB INC. JAMES VEATCH PH 9402 4716
VHF GROUP. TERRY TREZISE PH. 9332 7066
ALSO AT WWW.WIA.ORG.AU/VK6
YOUR AMATEUR RADIO LICENCE ENABLES YOU TO....
BUILD AND OPERATE YOUR OWN RADIO AND TEST GEAR.
WHILE ONLY THE AMATEUR SATELLITES - THERE ARE CURRENTLY ABOUT 10 OF THEM IN ORBIT
OPERATE VIA THE INTERNET FOR FREE! WITH OTHER HAMS
OPERATE YOUR OWN SLOW SCAN TV STATION THERE ARE SEVERAL IN PERTH
TAKE PART IN CONTESTS AND "FOX HUNTING"
OPERATE PORTABLE AND MOBILE - EVEN IN OTHER COUNTRIES
TALK TO THE SPACE STATION
BUILD AND EXPERIMENT WITH ANTENNAS
COMMUNICATE AND ASSIST WHEN DISASTERS OCCUR ALL OVER THE WORLD!
E.M.E. OPERATIONS - BOUNCING SIGNALS OFF MOON AND BACK TO EARTH
GBOCVS
W2MEL
ZL1DD
VI6EWT
ZL1CDX
HB9KOF
VISRAS
W9BNO
ZL2CAT

VK100WIA Super Springtime

Top left: Scout area at Perth Royal Show.

Top right: The amateur radio public display within Scout area at the show.

Main photo: The interior of the working station.

Inset at right : Graeme VK6BSL's AR display at VK100WIA Super Springtime, Perth Royal Show.

Genuine

Icom (Australia) 5 Year Warranty*

Don't risk your valuable equipment. Beware of imported products. Insist on a GENUINE Icom (Australia) 5 Year Warranty.

ONLY products purchased through **AUTHORISED** Icom (Australia) Amateur dealers carry a **GENUINE** Icom (Australia) 5 Year Warranty.

Be wary of warranty terms that differ from the GENUINE Icom (Australia) 5 year warranty.

For a list of authorised dealers, visit **www.icom.net.au**

Amateur

IC-7600

DIGITAL | D-STAR

ICOM

ICOM 445

To find out more about our latest products, call Icom on 03 9549 7500 or visit www.icom.net.au

* From the date of purchase, (excluding accessories), from an Australian authorised Icom dealer, provided a warranty registration is received by Icom (Australia), with all fields completed and legible. The 5 year warranty shall only apply if the unit is purchased on or after November 11, 2009

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